ORDER NO. AD9207236C8

Service Manual

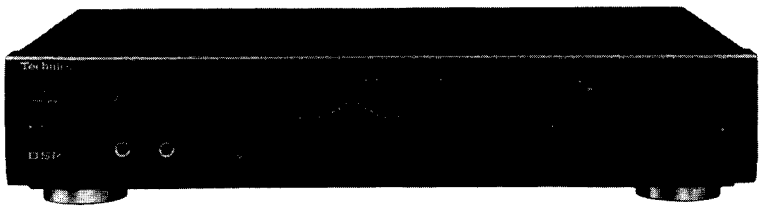
Digital Sound Processor

Digital Sound Processor

SH-GE90

Colour

(K)	..... Black Type



Areas

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	
(GC)	Asia, Latin America, Middle Near East and Africa	
(GN)	Oceania	

SPECIFICATIONS

(DIN 45 500)

■ EQUALIZER SECTION

Frequency response (center position)	15 Hz–20 kHz, −1 dB
Maximum output voltage	6 V
Rated output voltage	1 V
Rated total harmonic distortion (full scale input)	0.08% (1 kHz)
Input sensitivity	1 V
S/N (full scale input)	86 dB
Maximum input voltage	2.3 V (1 kHz)
Input impedance	47 kΩ
Gain	0±1 dB
Band level controls	±12 dB
3 element parametric equalizer	
Center frequency	
LOW	31.5, 40, 50, 63, 80, 100, 125, 160, 220 (Hz)
HIGH 1, 2	315, 450, 630, 800, 1 k, 1.25 k 1.6 k, 2.2 k, 3.15 k, 4.5 k, 6.3 k 8 k, 10 k, 12.5 k, 16 k (Hz)
(Q) control	
Narrow	1.8
Wide	0.7
Fixed mode	
Equalizer (6 modes)	HEAVY, CLEAR, SOFT, VOCAL HEADPHONE STEREO, CAR STEREO
Sound Field Processor (6 modes)	HALL, LIVE, DISCO, CHURCH STADIUM, THEATER

■ KARAOKE SECTION

Key control	−300~+300 cent
MIC1, MIC2	1.4 mV/4.7 kΩ
Mic echo	0.2–1.6 sec

■ GENERAL

Power consumption	17 W
Power supply	
For (E) (EB) (EG) (GN) area	AC 50/60 Hz, 230–240 V
For (GC) area	AC 50/60 Hz, 110 V/127 V/220 V/240 V
Dimensions (W×H×D)	430×92×290 mm
Weight	3 kg

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Technics

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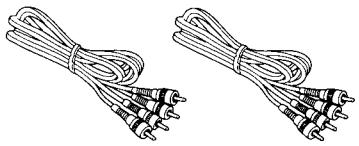
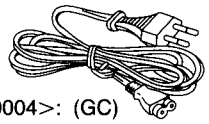
■ ACCESSORIES

•Stereo connection cables 2
<SJP2276>

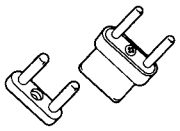


•AC power supply cord 1
<RJA0019-1K>: (E) (EG)
<SJA193>: (EG)



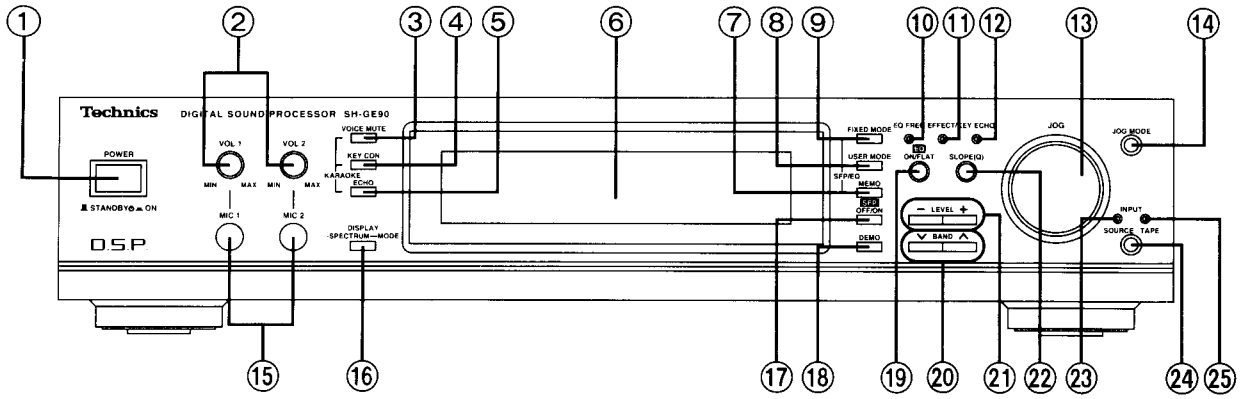
<RJA0004>: (GC)
<SJA173>: (GN)

•Power plug adaptor 1
<SJP9215>: (GC)



Note: The configuration of the AC power supply cord differs according to area.

■ LOCATION OF CONTROLS



Control section

① Power "STANDBY ⏻/ON" switch (POWER ▮ STANDBY ⏻ ▬ ON)

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY ⏻ position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

Note:

For this unit, even if this switch is switched to the "STANDBY" position, there is still a slight power consumption of about 2.7 watts; this is in order to assure the retention of the "most recent" memory and the preset-memory functions.

"Power-through" function

Discs, radio broadcasts, etc. can be heard even if the power of this unit is switched to STANDBY.
Note, however, that the power plug should be left connected to the AC outlet.

② Microphone volume controls (VOL1, VOL2)

③ Voice mute button (VOICE MUTE)

This button is used to change "KARAOKE" (using microphone with an accompaniment).

④ Key control button (KEY CON)

This button is used to adjust key level when performing "KARAOKE".

⑤ Echo button (ECHO)

This button is used to adjust the reverberation sound when in performing "KARAOKE".

⑥ Display section

⑦ Memory button (MEMO)

This button is used to store an original equalization curve or simulated listening environments.

⑧ User mode select button (USER MODE)

This button is used to select the user mode of equalization curve or simulated listening environments.

⑨ Fixed mode select button (FIXED MODE)

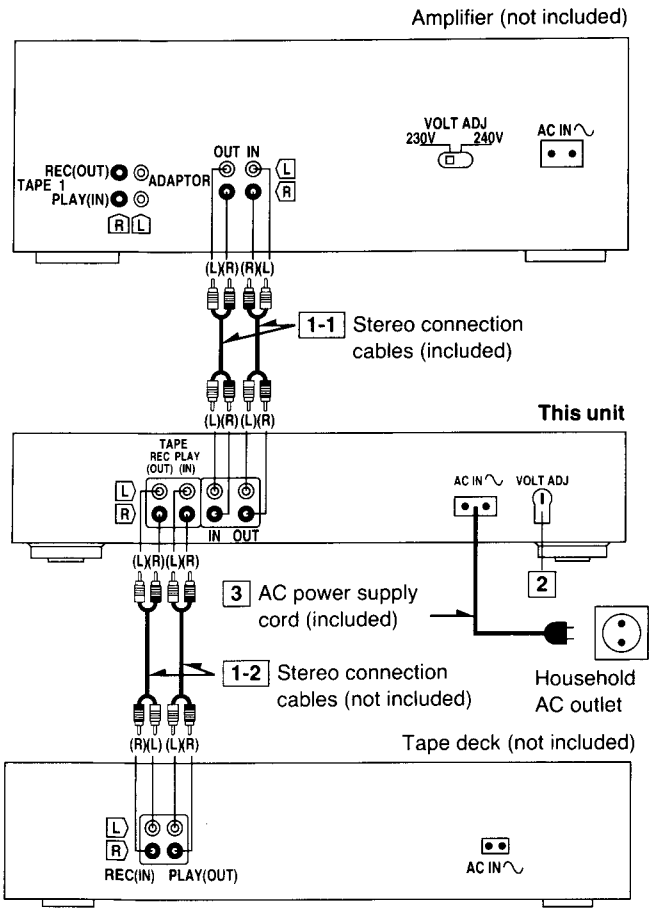
This button is used to select the fixed mode of equalization curve or simulated listening environments.

⑩ Equalizer frequency indicator (EQ FREQ)

⑪ Effect/key control indicator (EFFECT/KEY)

■ CONNECTIONS

Make connections in the numbered sequence by using the included cables.
The illustration below shows an example of connections made when this unit is combined with a Technics electronic component system, and shows only the connections to be made to and from this unit in that combination.



1 Connect the stereo connection cables.

Stereo connection cable
White **(L)**
Red **(R)**

1-1 Connect the stereo connection cables (included).
When you have an amplifier which has the terminals for external units (ADAPTOR/GRAPHIC EQ/EXT), connect this unit to those terminals.
When you have an amplifier which has no terminals for external units, connect this unit to the TAPE MONITOR terminal.

1-2 Connect the stereo connection cables (not included).

2 Setting the voltage selector (VOLT ADJ)

(For areas except continental Europe, United Kingdom and Australia)
Set the voltage selector to the voltage setting for the area in which the unit will be used.
[Use a minus (−) screwdriver]

- Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)
- If the power supply in your area is 117 V or 120 V, set to the "127 V" position.

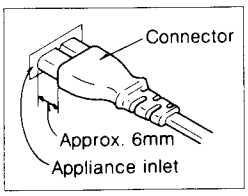
3 Connect the AC power supply cord.

Connect the AC power supply cord (included) after all other cables and cords are connected.

For Continental Europe and United Kingdom

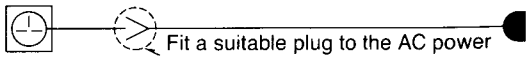
Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.

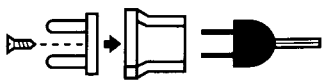


Note:
The configuration of AC power supply cord differs according to area.

For United Kingdom
Household AC outlet



For areas except continental Europe, United Kingdom and Australia
If the power plug will not fit your Household AC outlet, use the power plug adaptor (included).



⑫ **Echo indicator (ECHO)**

⑬ **Sound effect level control (JOG)**
This control is used for adjusting the level of simulated listening environments effect, equalization level and specific frequency shift.

⑭ **Jog mode button (JOG MODE)**
This button is used to control the equalizer frequency, the reverberation sound (effect), the key in the "KARAOKE" mode and the reverberation sound (echo) in the "KARAOKE" mode.

⑮ **Microphone jacks (MIC1, MIC2)**

⑯ **Display mode select button (DISPLAY, -SPECTRUM –MODE)**
This button is used to select one of three spectrum curves. If you press and hold this button, the display mode will change.

⑰ **SFP OFF/ON button (SFP , OFF/ON)**
This button is used to activate Sound Field Processor.

⑱ **Demonstration button (DEMO)**
This button is used to change sound effects sequentially.

⑲ **Equalizer ON/FLAT button (EQ , ON/FLAT)**
This button is used to switch the equalizer on or flat.

⑳ **Equalizer frequency select buttons (∨ BAND ∧)**
These buttons are used to select the equalization frequency.

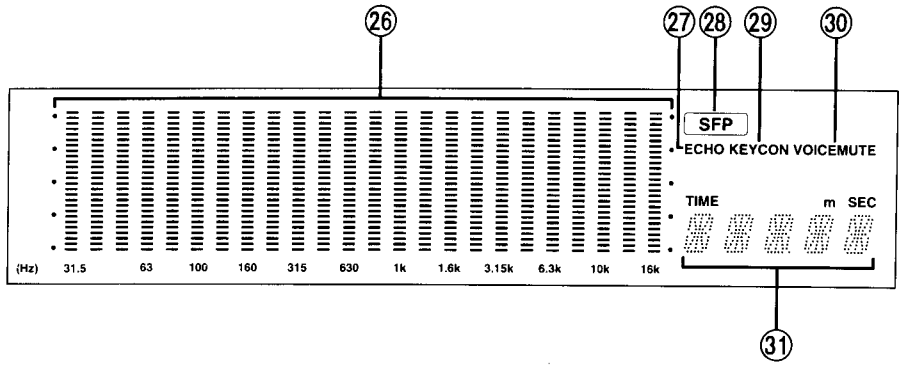
㉑ **Equalizer level-control buttons (– LEVEL +)**
These buttons are used to adjust of equalization level.

㉒ **Slope (Q) select button [SLOPE (Q)]**

㉓ **Source indicator**
Press the input selector to select "SOURCE", and the source indicator will illuminate to RED.

㉔ **Input selector button (INPUT, SOURCE TAPE)**
SOURCE: Set to this position to listen to the radio or a compact disc, etc.
TAPE: Set to this position to listen to a tape deck connected to the back of this unit.

㉕ **Tape indicator**
Press the input selector to select "TAPE", and the tape indicator will illuminate to YELLOW.



Display section

㉖ **Multi level display**
This display shows the equalization/spectrum analysis level.

㉗ **Echo indicator (ECHO)**

㉘ **SFP indicator (SFP)**
This indicator illuminate to activate simulated listening environments.

㉙ **Key control indicator (KEY CON)**

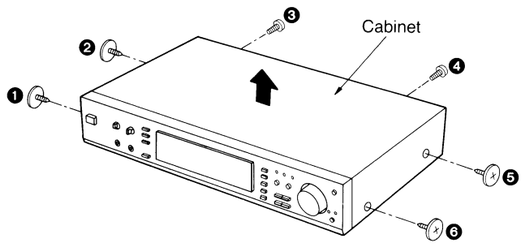
㉚ **Voice mute indicator (VOICE MUTE)**
This indicator illuminates to activate "KARAOKE" function.

㉛ **Sound effect display**
This display shows the mode of equalization curve or simulated listening environments , or delay time, etc.

■ DISASSEMBLY INSTRUCTIONS

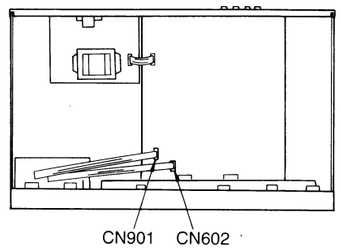
"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the Cabinet
Procedure 1	

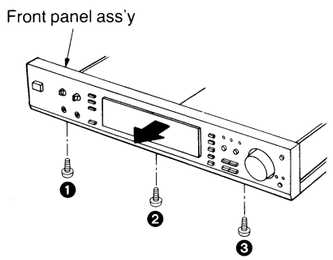


●Remove the 6 screws (❶~❻).

Ref. No. 2	Removal of the Front Panel Ass'y
Procedure 1→2	

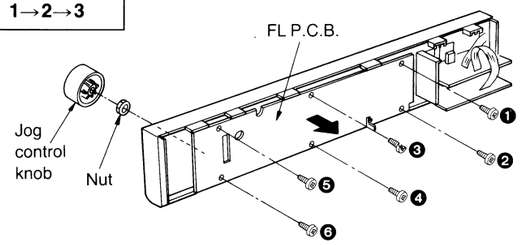


1. Remove the 2 flat cables (CN602, CN901).



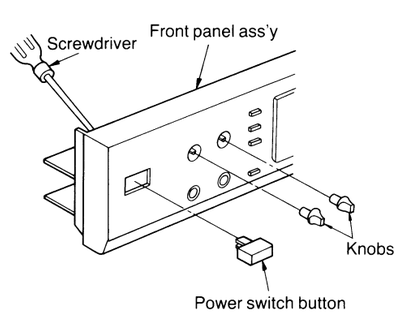
2. Remove the 3 screws (❶~❸).
3. Remove the front panel ass'y in the direction of arrow.

Ref. No. 3	Removal of the FL P.C.B.
Procedure 1→2→3	

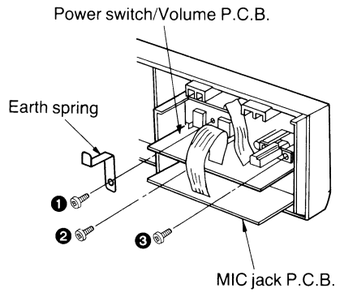


1. Pull out the jog control knob.
2. Remove the nut.
3. Remove the 6 screws (❶~❻).
4. Remove the FL P.C.B. in the direction of arrow.

Ref. No. 4	Power switch/Volume P.C.B. and MIC Jack P.C.B.
Procedure 1→2→4	

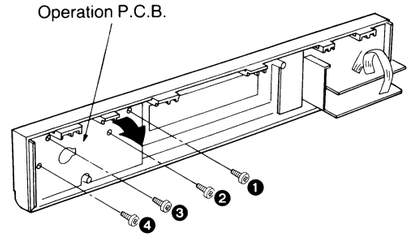


1. Remove the power switch button by pushing it from behind the front panel ass'y.
2. Pull out the 2 knobs.



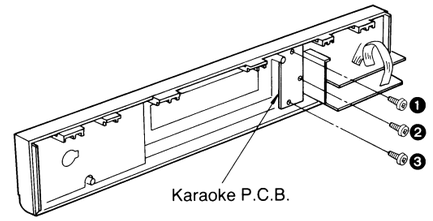
3. Remove the 3 screws (❶~❸).
4. Remove the earth spring.

Ref. No. 5	Removal of the Operation P.C.B.
Procedure 1→2→3→5	



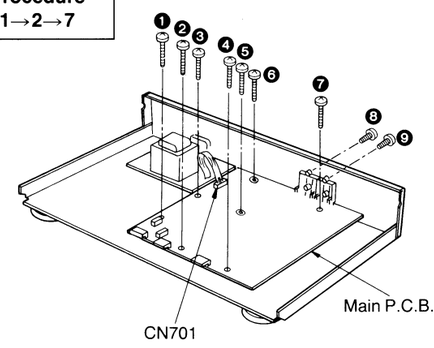
1. Remove the 4 screws (❶~❹).
2. Remove the operation P.C.B. in the direction of arrow.

Ref. No. 6	Removal of the karaoke P.C.B.
Procedure 1→2→3→6	



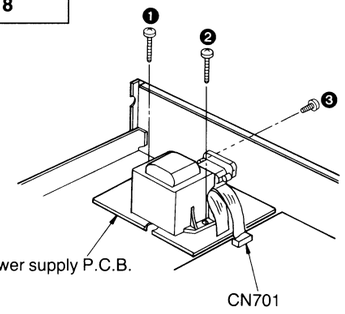
●Remove the 3 screws (❶~❸).

Ref. No. 7	Removal of the Main P.C.B.
Procedure 1→2→7	



1. Remove the 9 screws (❶~❾).
2. Remove the 1 flat cable (CN701).

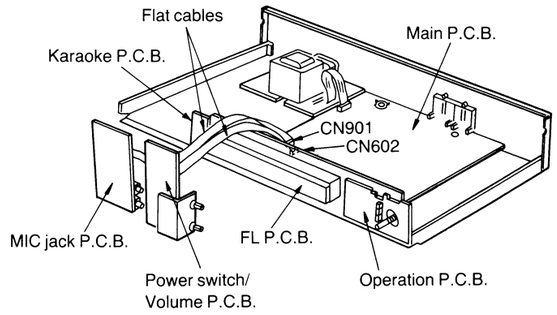
Ref. No. 8	Removal of the Power Supply P.C.B.
Procedure 1→8	



1. Remove the 1 flat cable (CN701).
2. Remove the 3 screws (❶~❸).

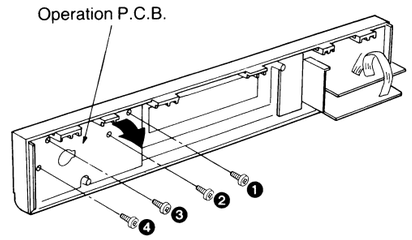
Ref. No. 9	How to check the Power Switch/Volume P.C.B. MIC Jack P.C.B. and Operation P.C.B.
Procedure 1→2→4→5→6→9	

1. Reinstall the FL P.C.B. to the main P.C.B.
2. Install the operation P.C.B. and karaoke P.C.B. to the FL P.C.B.
3. Connect the flat cables of the power switch/volume P.C.B. to the connectors (CN602 and CN901) on the main P.C.B.
4. Place the MIC Jack P.C.B., power switch/volume P.C.B. and operation P.C.B. as shown right to check their foil patterns.



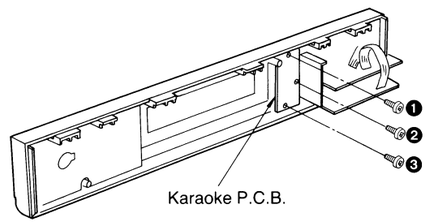
Ass'y

Ref. No. 5	Removal of the Operation P.C.B.
Procedure 1→2→3→5	



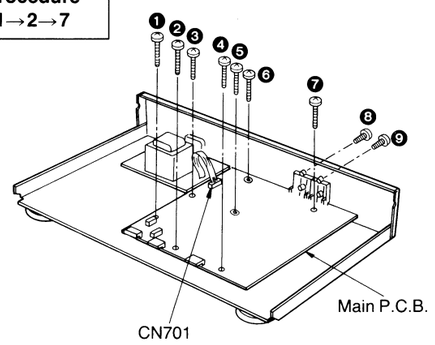
1. Remove the 4 screws (❶~❹).
2. Remove the operation P.C.B. in the direction of arrow.

Ref. No. 6	Removal of the karaoke P.C.B.
Procedure 1→2→3→6	



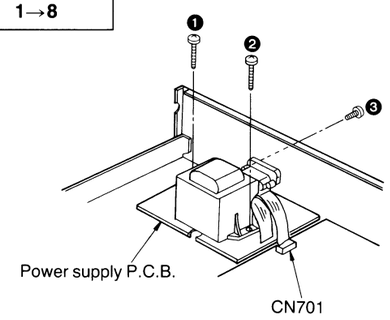
●Remove the 3 screws (❶~❸).

Ref. No. 7	Removal of the Main P.C.B.
Procedure 1→2→7	



1. Remove the 9 screws (❶~❾).
2. Remove the 1 flat cable (CN701).

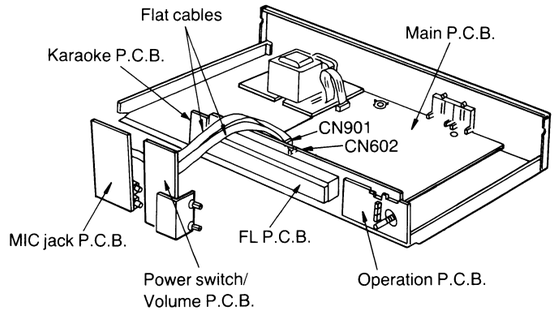
Ref. No. 8	Removal of the Power Supply P.C.B.
Procedure 1→8	



1. Remove the 1 flat cable (CN701).
2. Remove the 3 screws (❶~❸).

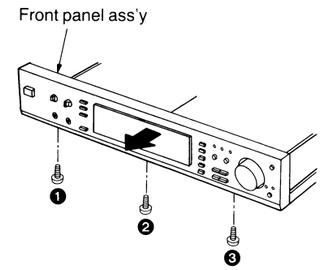
Ref. No. 9	How to check the Power Switch/Volume P.C.B. MIC Jack P.C.B. and Operation P.C.B.
Procedure 1→2→4→ 5→6→9	

1. Reinstall the FL P.C.B. to the main P.C.B.
2. Install the operation P.C.B. and karaoke P.C.B. to the FL P.C.B.
3. Connect the flat cables of the power switch/volume P.C.B. to the connectors (CN602 and CN901) on the main P.C.B.
4. Place the MIC Jack P.C.B., power switch/volume P.C.B. and operation P.C.B. as shown right to check their foil patterns.

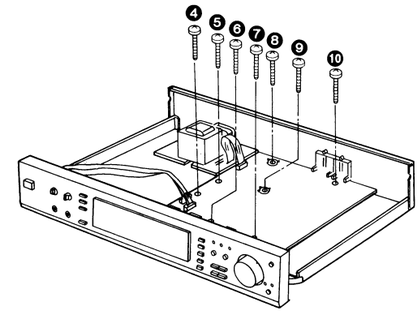


Ref. No. 10	How to check the Main P.C.B.
Procedure 1→10	

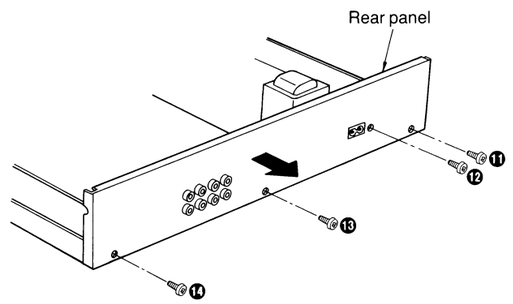
●When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.



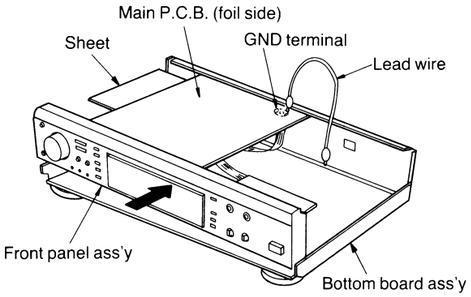
1. Remove the 3 screws (❶~❸).
2. Remove the front panel ass'y in the direction of arrow.



3. Remove the 7 screws (❹~❿).



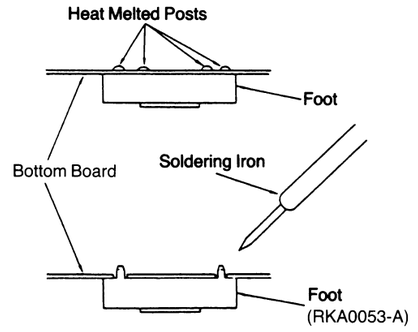
4. Remove the 4 screws (⓫~⓮).
5. Remove the rear panel in the direction of arrow.



6. As shown left, turn the main P.C.B. over to face the foil pattern toward you.
7. Spread insulating material under the main P.C.B. to prevent short circuit.
8. Connect the G.N.D terminal to the bottom board ass'y by the lead wire.
9. Reinstall the front panel ass'y to the main P.C.B.

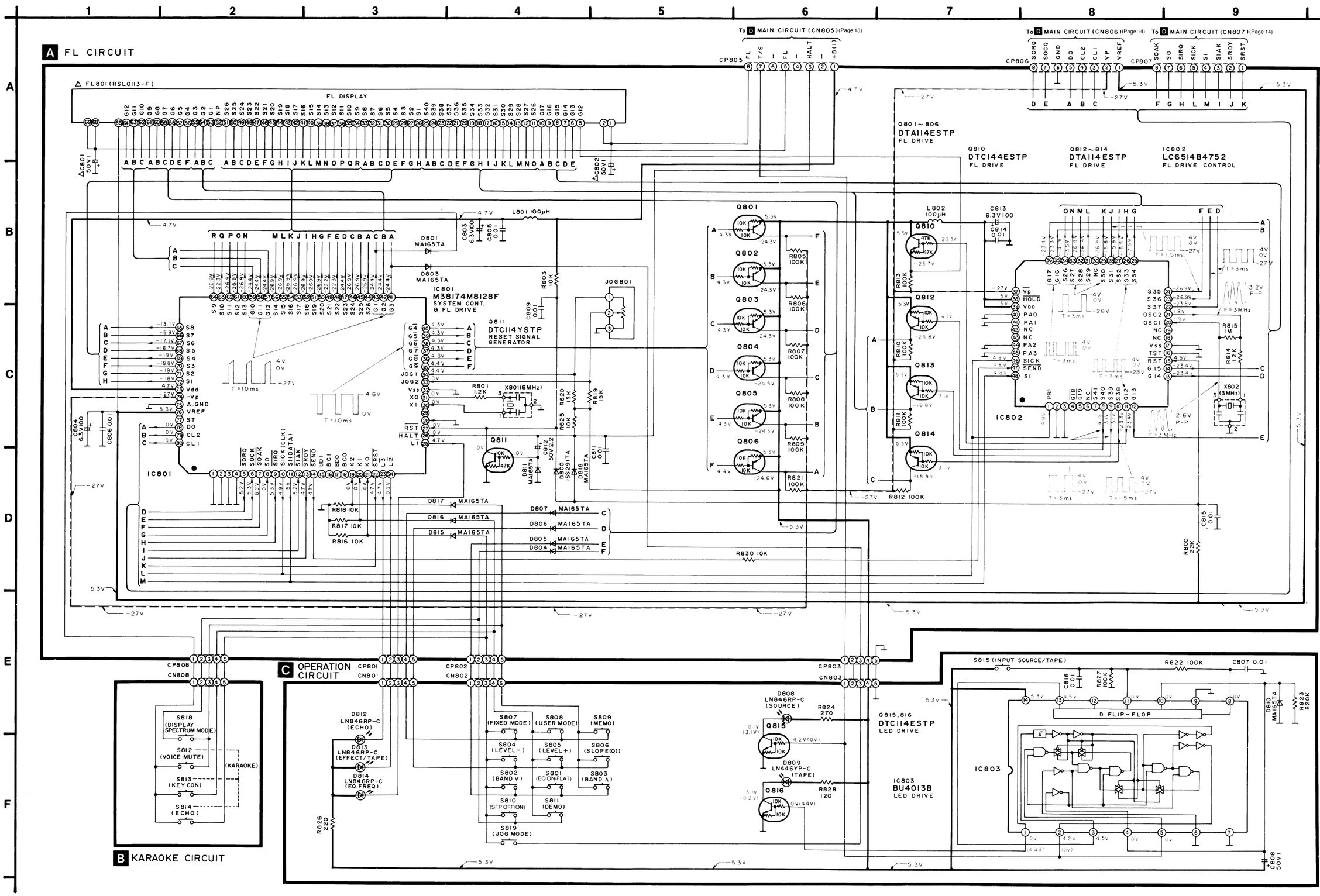
●Replacement of the Foot

1. Remove the 4 heat melted posts on the Bottom Board with a pair of nippers or similar tool.
2. To replace the foot (RKA0053-A) on the Bottom Board, melt the 4 posts with soldering iron.



SH-GE90 SH-GE90

■ SCHEMATIC DIAGRAM (Parts list on pages 25–28)



Notes:

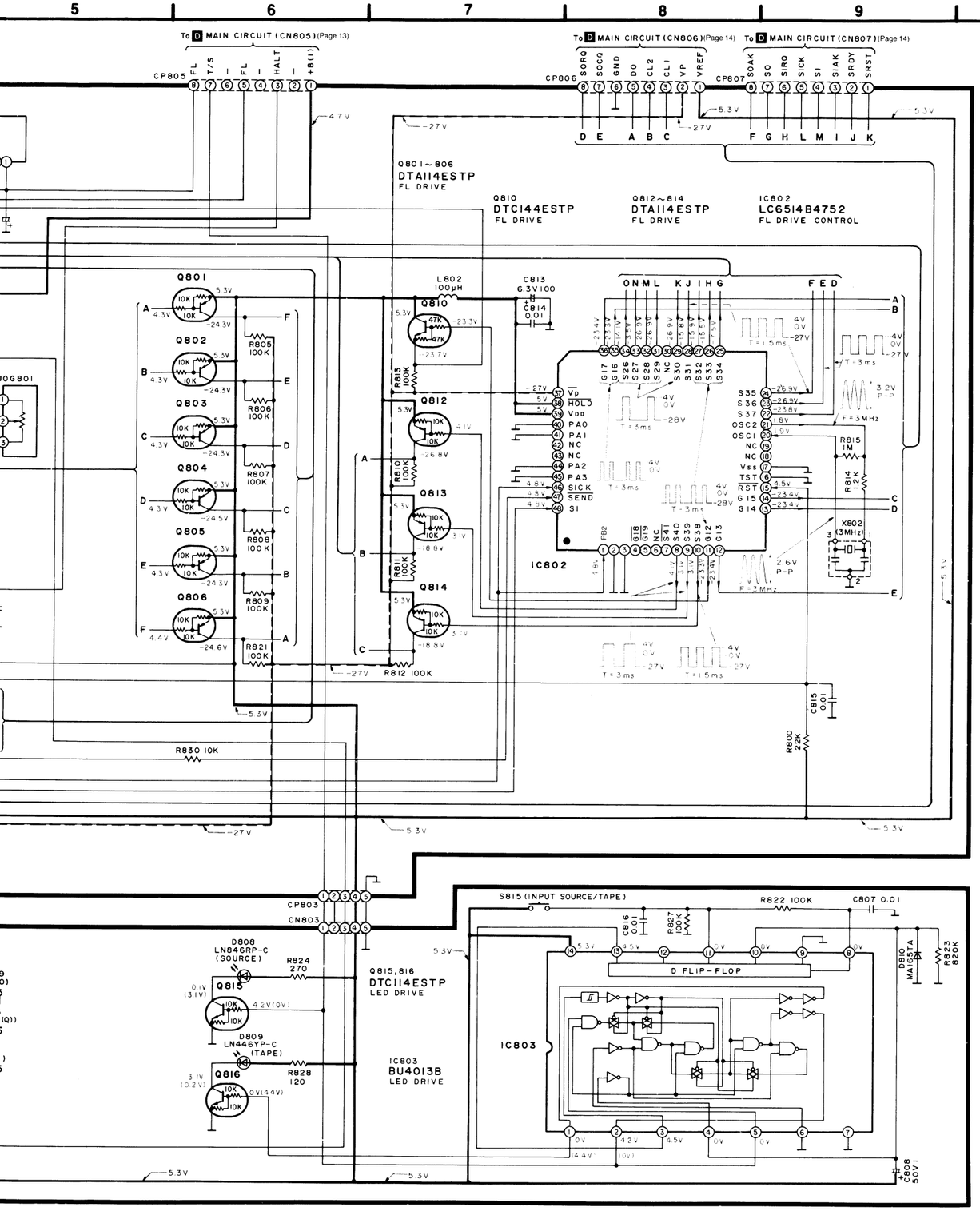
- ●S701
- ●S801
- ●S802
- ●S803
- ●S804
- ●S805
- ●S806
- ●S807
- ●S808
- ●S809
- ●S810
- ●S811
- ●S812
- ●S813
- ●S814
- ●S815
- ●S818
- ●S819
- ●S901-1~ S901-3

●Indicated volt
chassis taken
circuit tester.
No mark...IN

●Important saf
Components
Furthermore,
are used. Wh

●**This schema**

***Caution!**
IC and LSI are
Secondary tro
*Cover the par
*Ground the s
*Put a conduc
*Do not touch



Notes:

- ●S701 : Voltage select switch (VOL ADJ) in "240 V" position. for (GC) area.
- ●S801 : Equalizer ON/FLAT switch. (EQ, ON/FLAT)
- ●S802 : Equalizer-frequency select switch. (BAND∨)
- ●S803 : Equalizer-frequency select switch. (BAND∧)
- ●S804 : Equalizer level-control switch. (LEVEL−)
- ●S805 : Equalizer level-control switch. (LEVEL+)
- ●S806 : Slope (Q) select switch. [SLOPE (Q)]
- ●S807 : Fixed mode select switch. (FIXED MODE)
- ●S808 : User mode select switch. (USER MODE)
- ●S809 : Memory switch. (MEMO)
- ●S810 : SFP OFF/ON switch. (SFP, OFF/ON)
- ●S811 : Demonstration switch. (DEMO)
- ●S812 : Voice mute switch. (VOICE MUTE)
- ●S813 : Key control switch. (KEY CON)
- ●S814 : Echo switch. (ECHO)
- ●S815 : Input select switch. (INPUT, SOURCE TAPE)
- ●S818 : Display mode select switch. (DISPLAY, -SPECTRUM MODE)
- ●S819 : Jog mode switch. (JOG MODE)
- ●S901-1~ S901-3 : Power "STANDBY ⏻ /ON" switch (POWER ▮ STANDBY ⏻ ▁ ON) in "ON" position.

●Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
No mark...INPUT: SOURCE ( )...INPUT: TAPE

●Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

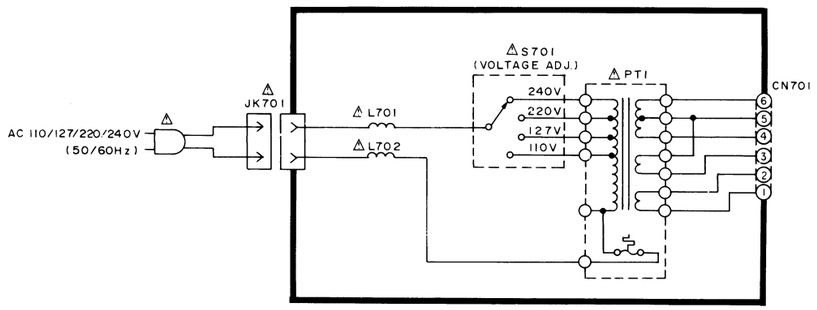
●**This schematic diagram may be modified at any time with the development of new technology.**

***Caution!**
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
*Cover the parts boxes made of plastics with aluminum foil.
*Ground the soldering iron.
*Put a conductive mat on the work table.
*Do not touch the legs of IC or LSI with the fingers directly.

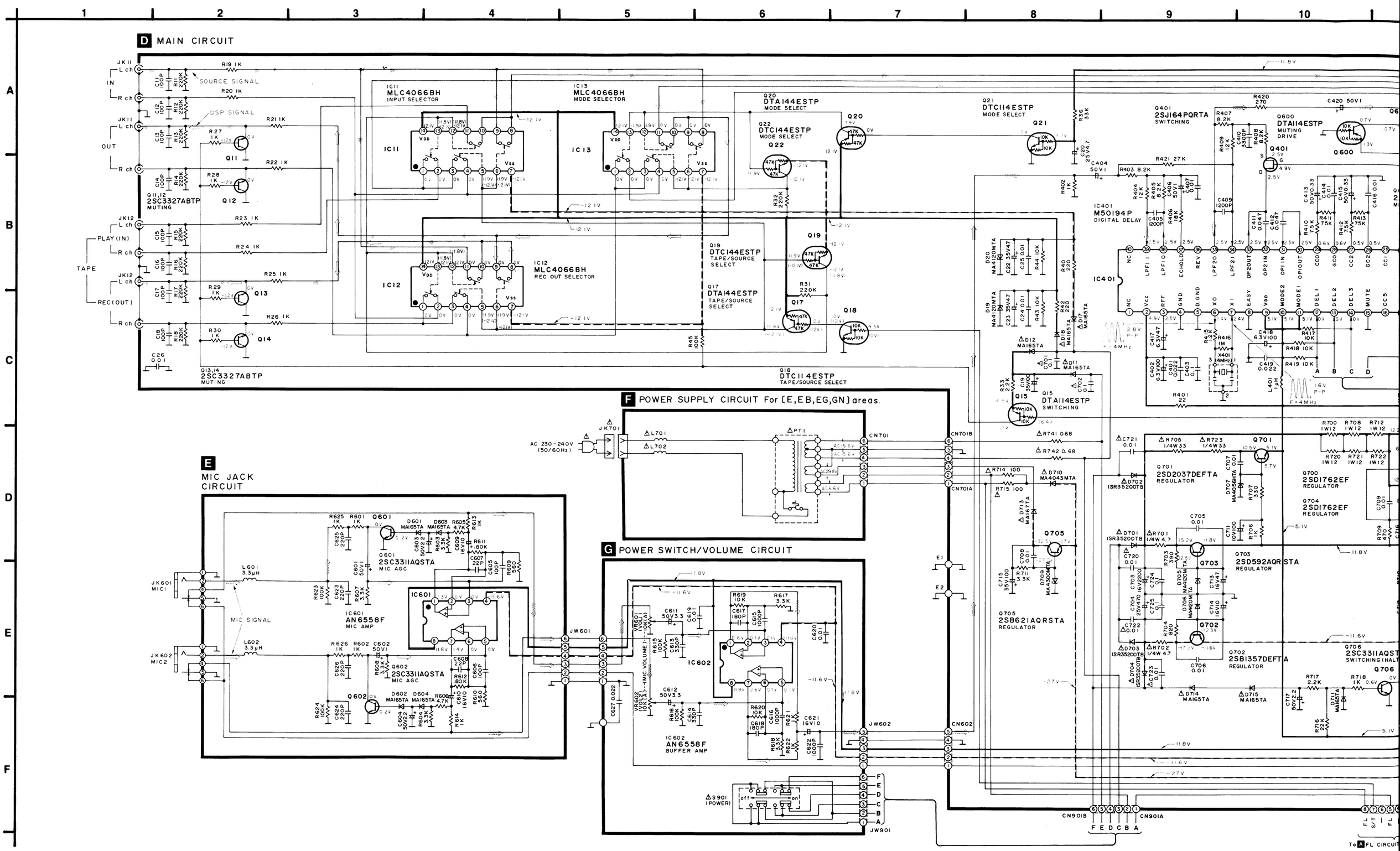
Source signal (L ch) **DSP signal line** **MIC signal**

Positive voltage lines **Negative voltage line**

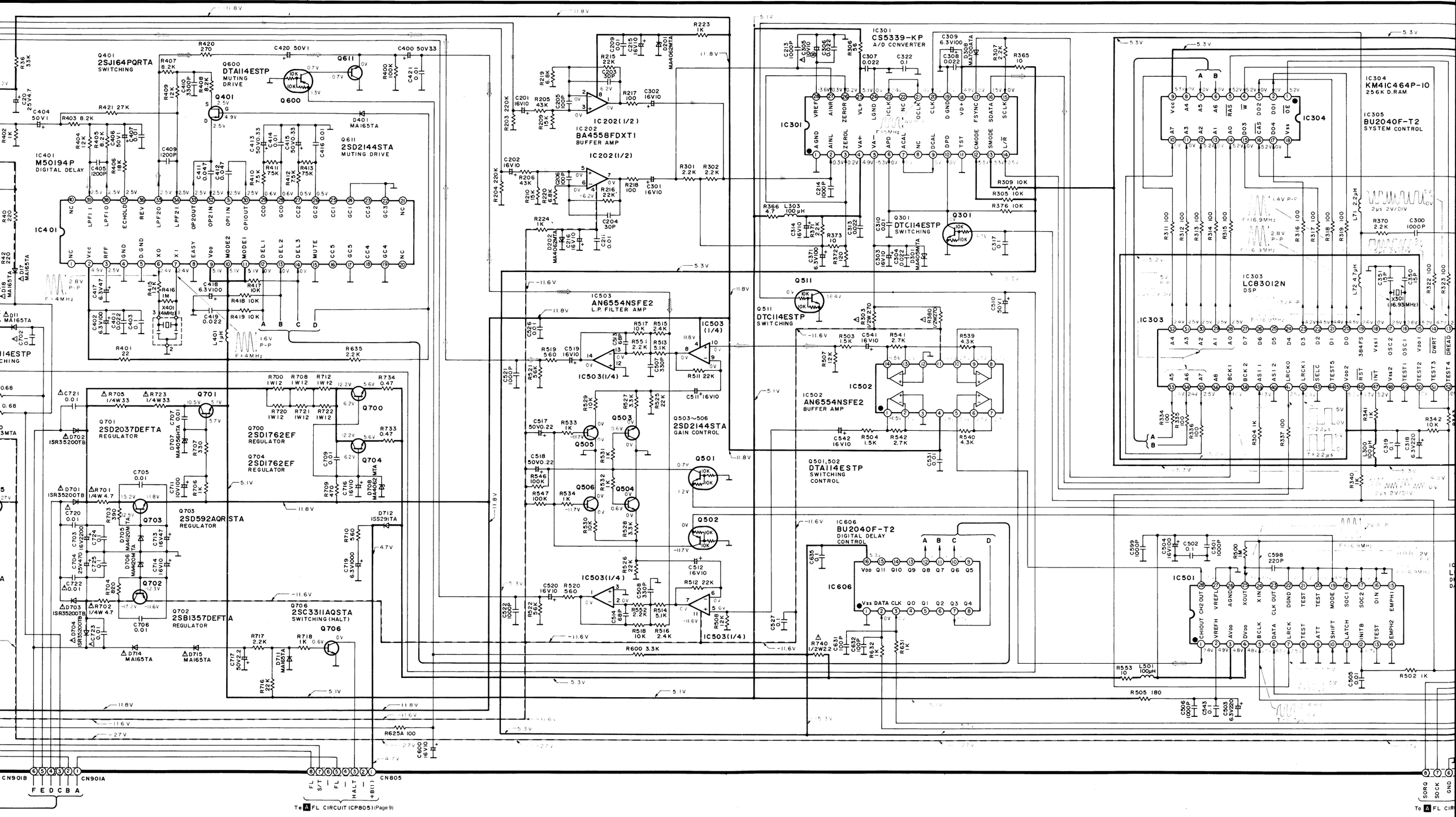
F POWER SUPPLY CIRCUIT For [GC] area.



■ SCHEMATIC DIAGRAM (Parts list on pages 25–28)



9 10 11 12 13 14 15 16 17 18



12 13 14 15 16 17 18 19 20 21 22

IC202(1/2)
BA4558FDXT1
BUFFER AMP

IC503(1/4)
AN6554NSFE2
L.P. FILTER AMP

IC301
CS5339-KP
A/D CONVERTER

IC502
AN6554NSFE2
BUFFER AMP

Q503~506
2SD2144STA
GAIN CONTROL

Q501,502
DTA114ESTP
SWITCHING CONTROL

Q511
DTC114ESTP
SWITCHING

Q301
DTC114ESTP
SWITCHING

IC606
BU2040F-T2
DIGITAL DELAY CONTROL

IC304
KM41C464P-10
256K D.RAM

IC305
BU2040F-T2
SYSTEM CONTROL

IC303
LC83012N
DSP

IC501
LC7883K
DIGITAL FILTER & D/A CONVERTER

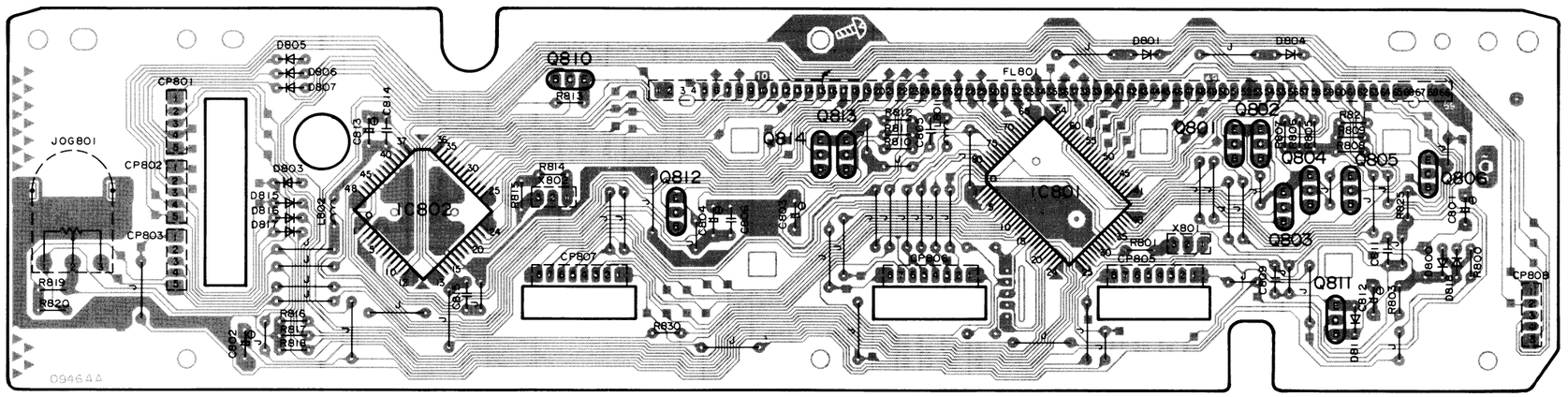
To A FL CIRCUIT (CP806) (Page 9)

To A FL CIRCUIT (CP807) (Page 9)

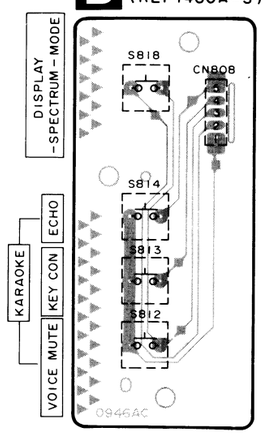
SH-GE90 SH-GE90

■ PRINTED CIRCUIT BOARD DIAGRAM

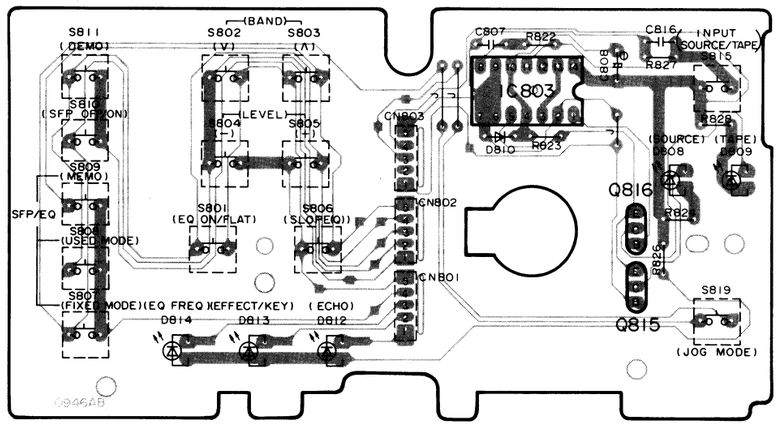
A FL P.C.B. (REPI460A-S)



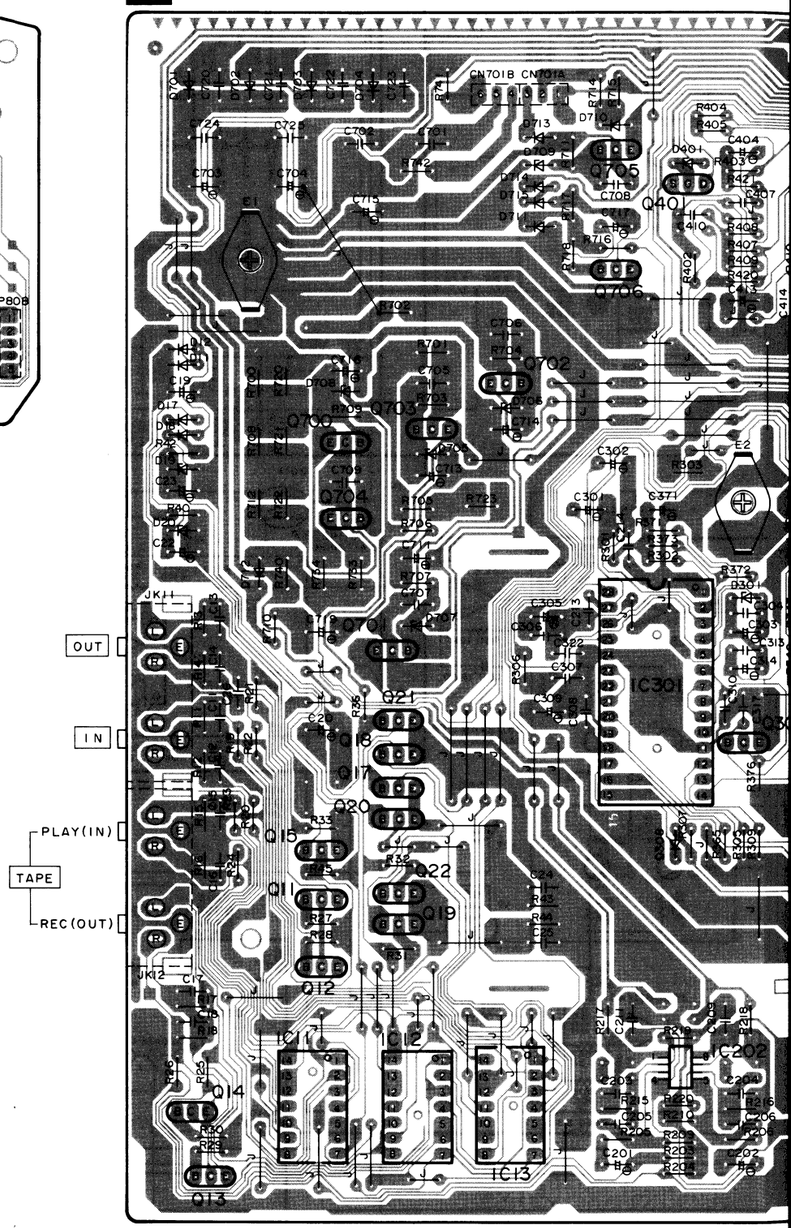
B KARAOKE P.C.B. (REPI460A-S)



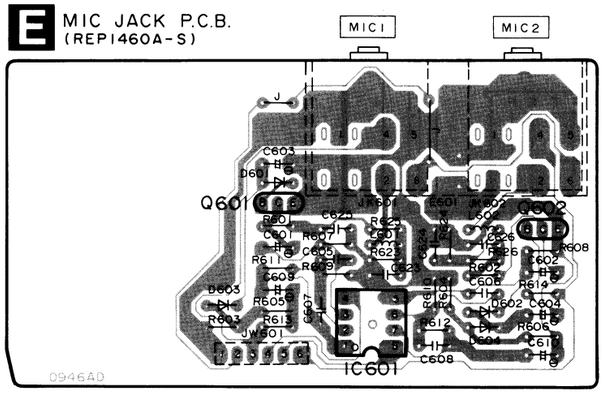
C OPERATION P.C.B. (REPI460A-S)



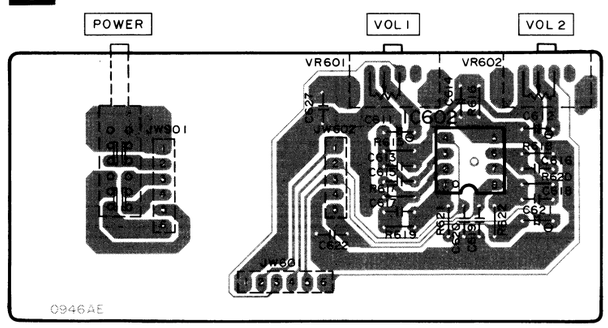
D MAIN P.C.B. (REPI461A-M)



E MIC JACK P.C.B. (REPI460A-S)

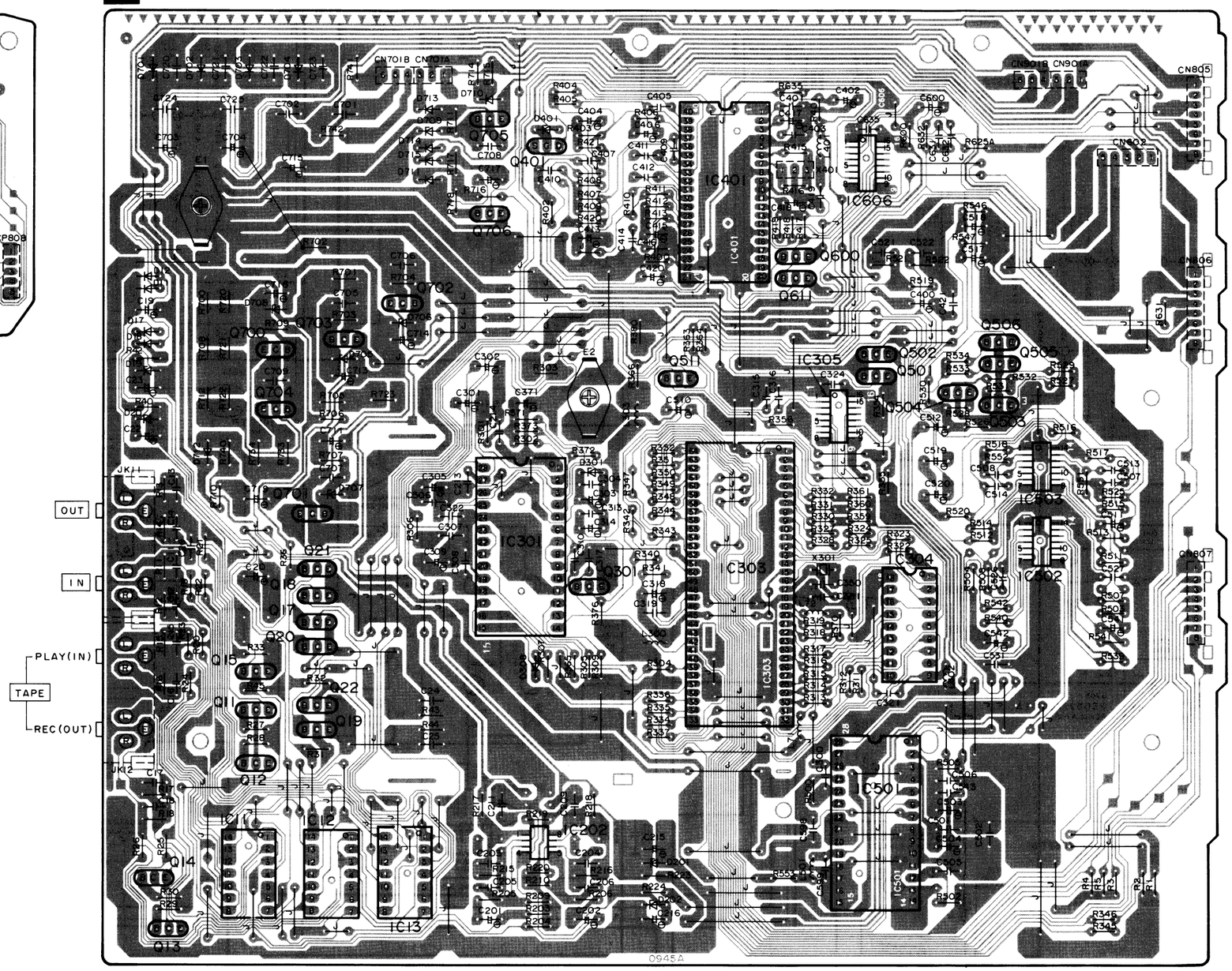


G POWER SWITCH/VOLUME P.C.B. (REPI460A-S)

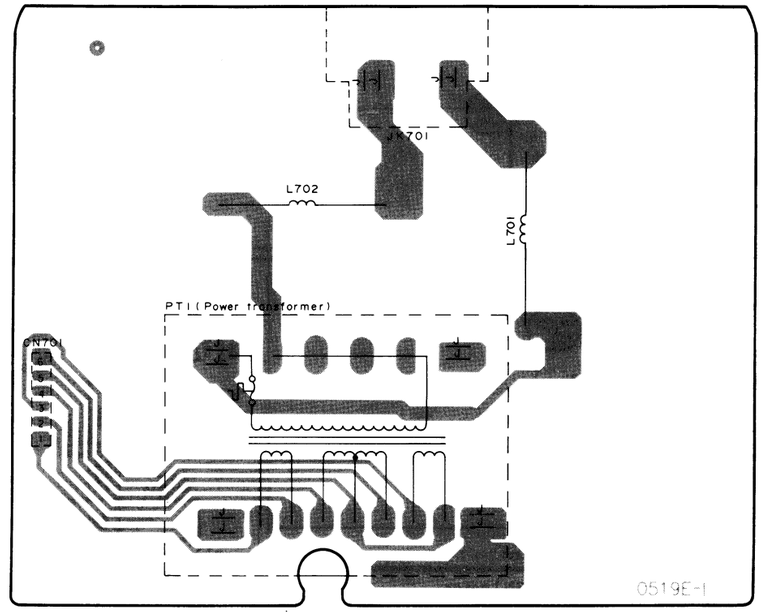


7 8 9 10 11 12 13 14 15 16 17

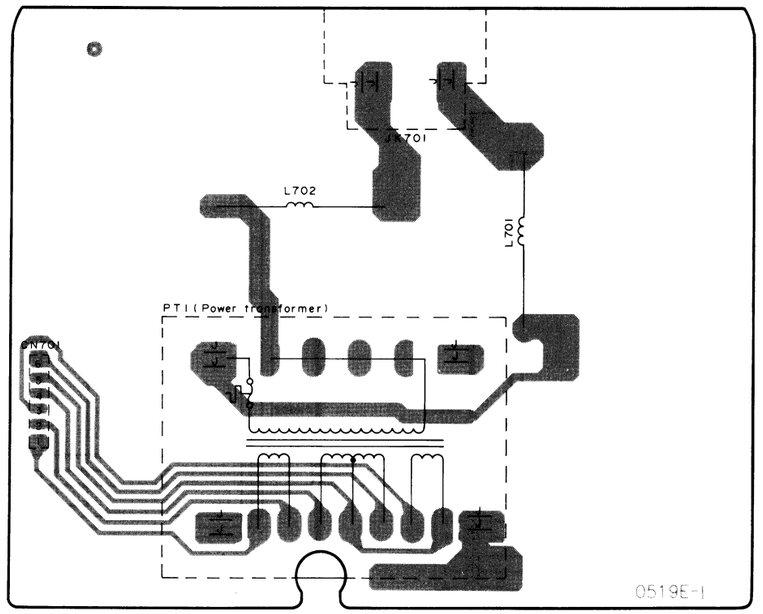
D MAIN P.C.B. (REPI461A-M)



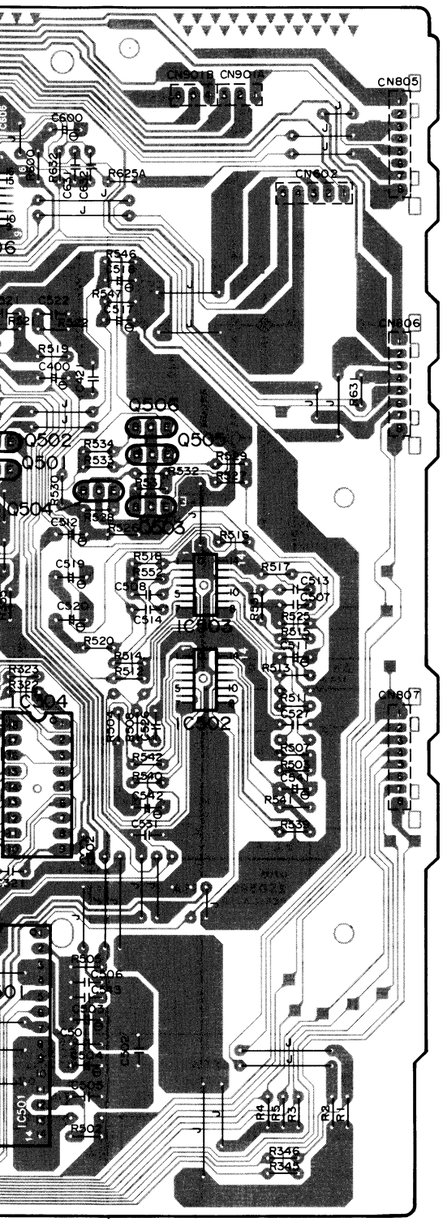
F POWER SUPPLY P.C.B.
FOR (E, EB, EG) AREAS.
(REPI463B-P)



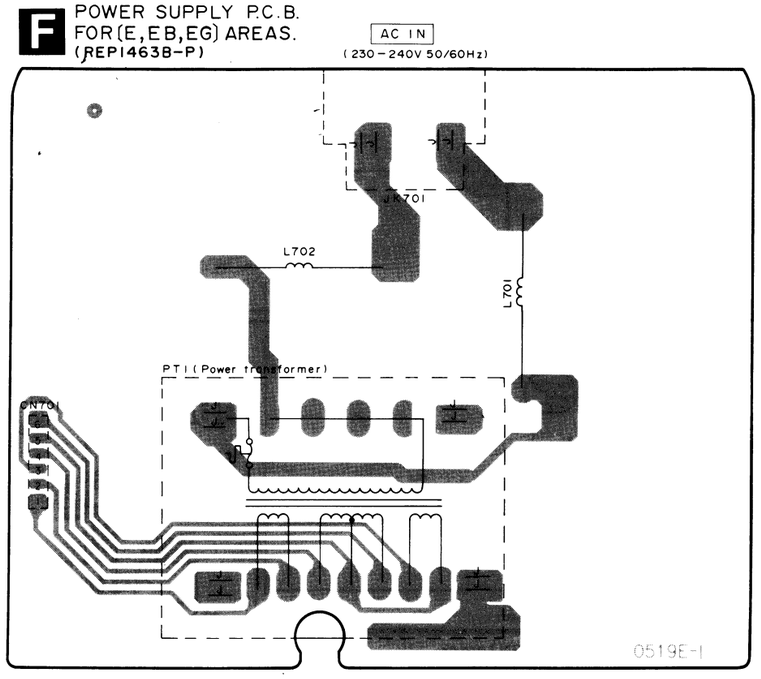
F POWER SUPPLY P.C.B.
FOR (GN) AREA.
(REPI463D-P)



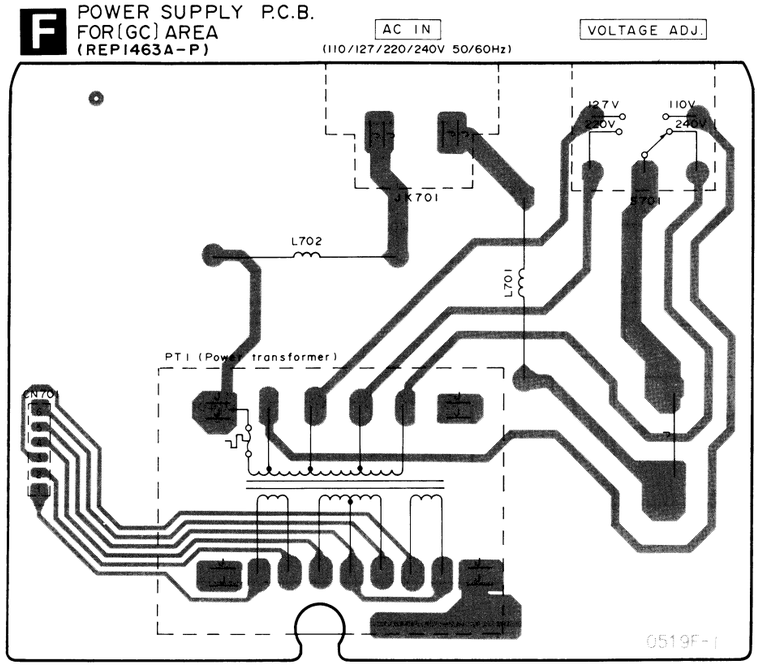
12 13 14 15 16 17 18 19 20 21 22



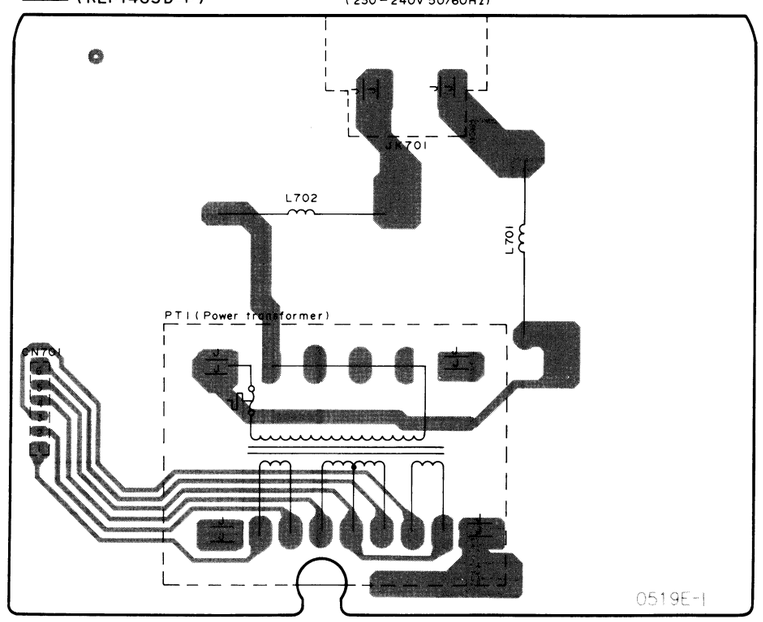
F POWER SUPPLY P.C.B.
FOR(E,EB,EG) AREAS.
(REP1463B-P)



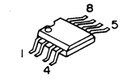
F POWER SUPPLY P.C.B.
FOR(GC) AREA
(REP1463A-P)



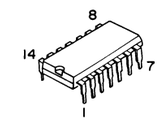
F POWER SUPPLY P.C.B.
FOR(GN) AREA.
(REP1463D-P)



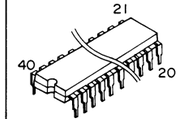
BA4558FDXT1



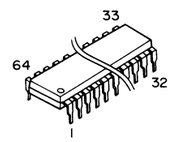
BU4013B



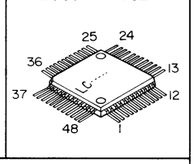
M50194P

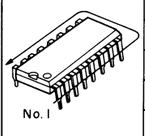


LC83012N



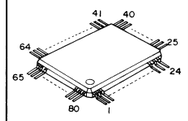
LC6514B4752

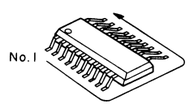




AN6558F	8 Pin
MLC4066BH	14 Pin
KM41C464P-10	18 Pin
CS5339-KP	28 Pin
LC7883K	28 Pin

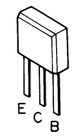
M38174M8128F





AN6554NSFE2	14 Pin
BU2040F-T2	16 Pin

2SC3311AQSTA



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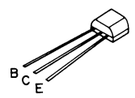
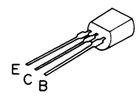
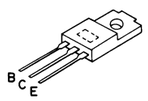


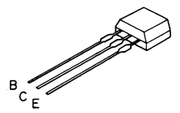
2SB621AQRSTA
2SD592AQRSTA



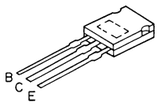
2SD1762EF



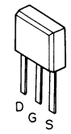
DTA114ESTP
DTA144ESTP
DTC114ESTP
DTC114YSTP
DTC144ESTP
2SD2144STA

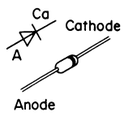


2SB1357DEFTA
2SD2037DEFTA



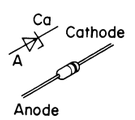
2SJ164PQRTA

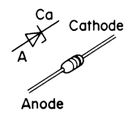




1SR35200TB
1SS291TA
MA165TA
MA167TA
MA700ATA

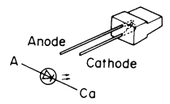
MA4120MTA
MA4300MTA



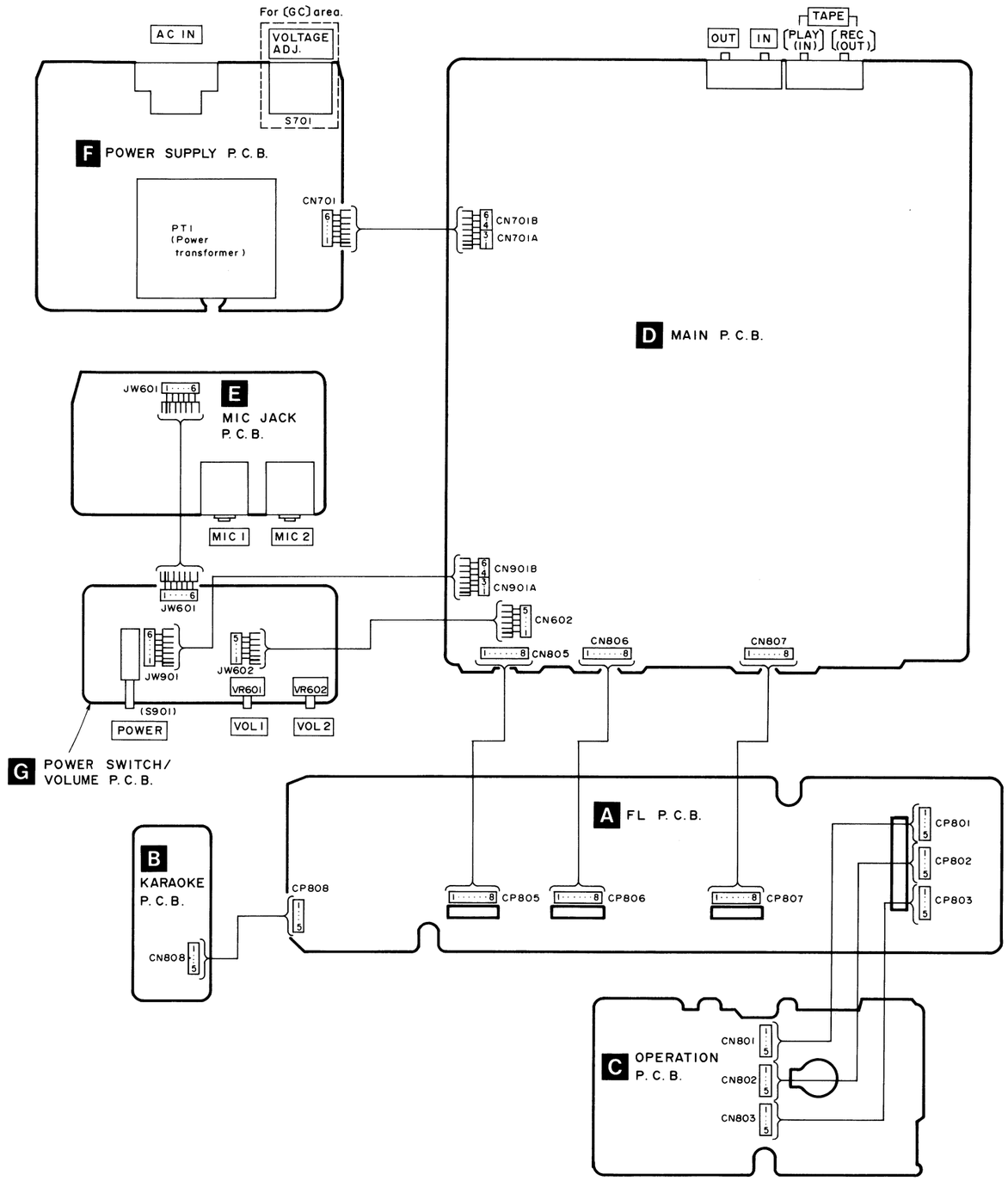


MA4043MTA
MA4051MTA
MA4056HTA
MA4062MTA

LN446YP-C
LN846RP-C

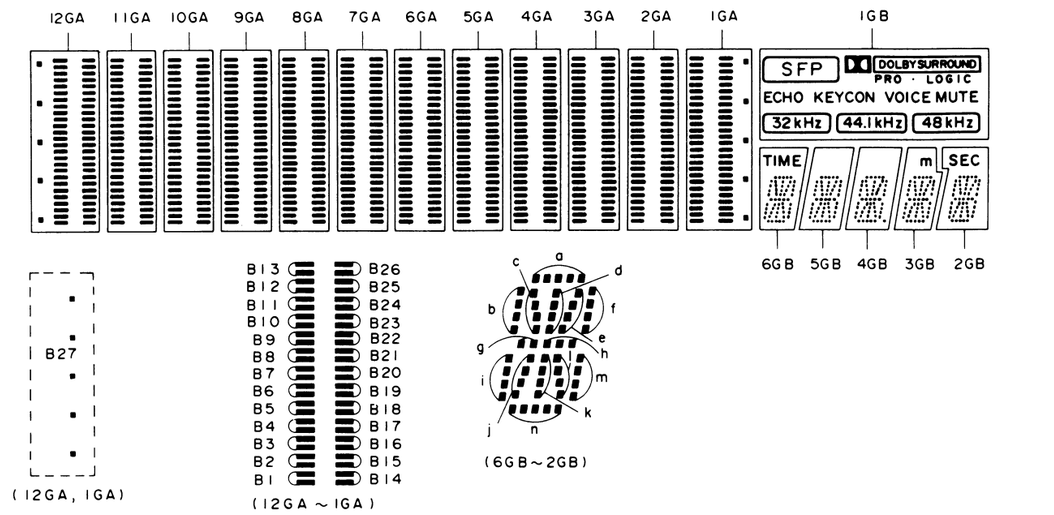


■ WIRING CONNECTION DIAGRAM



■ DESCRIPTION OF FL PANEL [FL801 (RSL0113-F)]

•Grid assignment


12GA 11GA 10GA 9GA 8GA 7GA 6GA 5GA 4GA 3GA 2GA 1GA
1GB
SFP
DOLBY SURROUND PRO · LOGIC
ECHO KEYCON VOICE MUTE
32kHz 44.1kHz 48kHz
TIME
m
SEC
6GB 5GB 4GB 3GB 2GB
B27
(12GA, 1GA)
B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1
B26 B25 B24 B23 B22 B21 B20 B19 B18 B17 B16 B15 B14
(12GA ~ 1GA)
a b c d e f g h i j k m n
(6GB~2GB)

•Pin connection

Pin No.	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Connection	P10A	P9A	P8A	P7A	P6A	P5A	P4A	P3A	P2A	P1A	P15B	P14B	P13B	P12B	P11B	P10B	P9B	P8B	P7B	P6B	P5B	P4B	P3B	P2B	P1B	6GB	5GB	4GB	3GB	2GB	1GB	NP	NP	F1	F1

Pin No.	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
Connection	F2	F2	NP	NP	P27A	12GA	11GA	10GA	9GA	8GA	7GA	6GA	5GA	4GA	3GA	2GA	1GA	NP	P26A	P25A	P24A	P23A	P22A	P21A	P20A	P19A	P18A	P17A	P16A	P15A	P14A	P13A	P12A	P11A

•Anode connection

	12GA、1GA	11GA~2GA
P1A	B1	B1
P2A	B2	B2
P3A	B3	B3
P4A	B4	B4
P5A	B5	B5
P6A	B6	B6
P7A	B7	B7
P8A	B8	B8
P9A	B9	B9
P10A	B10	B10
P11A	B11	B11
P12A	B12	B12
P13A	B13	B13
P14A	B14	B14
P15A	B15	B15

	12GA、1GA	11GA~2GA
P16A	B16	B16
P17A	B17	B17
P18A	B18	B18
P19A	B19	B19
P20A	B20	B20
P21A	B21	B21
P22A	B22	B22
P23A	B23	B23
P24A	B24	B24
P25A	B25	B25
P26A	B26	B26
P27A	B27	—

	6GB	5GB	4GB	3GB	2GB	1GB
P1B	a	a	a	a	a	●
P2B	b	b	b	b	b	SFP
P3B	c	c	c	c	c	ECHO
P4B	d	d	d	d	d	KEYCON
P5B	e	e	e	e	e	VOICE MUTE
P6B	f	f	f	f	f	32kHz
P7B	g	g	g	g	g	44.1kHz
P8B	h	h	h	h	h	48kHz
P9B	i	i	i	i	i	—
P10B	j	j	j	j	j	—
P11B	k	k	k	k	k	—
P12B	l	l	l	l	l	—
P13B	m	m	m	m	m	—
P14B	n	n	n	n	n	—
P15B	TIME	—	o	m	SEC	—

■ FUNCTION OF IC TERMINALS

■ IC303 (LC83012N)

Pin No.	Terminal Name	I/O	Function
1, 4, 6	P0, P3, P5	I/O	Not used (connect to GND)
2, 3, 5	P1, P2, P4	I	Mode signal input terminal
7	AOTDF1	O	Audio data output terminal
8	AOTDF2	O	Not used
9	DFBCK	O	Bit clock signal output terminal
10	DFWCK	O	Word clock signal output terminal
11	$\overline{RAS}$	O	Random access signal output terminal
12	$\overline{CAS}$	O	CAS signal output terminal
13	$\overline{DREAD}$	O	Data read signal output terminal
14	$\overline{DWRT}$	O	Data writing signal output terminal
15	$V_{DD}1$	I	Power supply (+5 V)
16	OSC1	I	Clock signal input terminal (384Fs)
17	OSC2	O	Not used
18	$V_{SS}1$	I	GND terminal
19	384FS	O	Not used
20~23	D0~D3	I/O	IC304 (DRAM) Data signal input/output terminal
24~27	D4~D7	I/O	Not used
28~35	A0~A7	O	IC304 (DRAM) Address data signal output terminal
36	A8	O	Not used
37	BCK1	I	Bit clock signal output terminal
38	BCK2	I	Bit clock signal output terminal
39	AS11	I	Audio data signal input terminal
40	ASI2	I	Not used
41	LRCK0	O	L-R ch Identifier signal output terminal
42	LRCK1	I	L-R ch Identifier signal input terminal
43, 44	$\overline{SELC}$ TEST5	— —	Not used
45	$V_{DD}2$	I	Power supply (+5 V)
46	$\overline{RST}$	I	Reset terminal
47	$\overline{INT}$	I	Interrupt signal input terminal
48	$V_{SS}2$	I	GND terminal
49~52	TEST1~TEST4	I	Not used
53~55	AOBCK ASO AOWCK	—	Not used
56	SO	O	8 bit serial data output terminal
57	SOCK	I	Serial clock signal input terminal
58	$\overline{SORQ}$	I	Serial data control signal input terminal (request signal input)
59	$\overline{SOAK}$	O	Prectice (serial data output) control signal output terminal
60	SI	I	8 bit serial data input terminal
61	SICK	I	Serial clock signal input terminal
62	$\overline{SIRQ}$	I	Serial data request signal input
63	$\overline{SIAK}$	O	Prectice (serial data input) control signal output terminal
64	$\overline{SRDY}$	I	Ready signal input terminal

■ IC501 (LC7883K)

Pin No.	Terminal Name	I/O	Function
1	CH1OUT	O	DAC signal output (L-ch out)
2	VREFH	I	Reference voltage input
3	AV_{DD}	I	Analog power supply
4	DV_{DD}	I	Digital power supply
5	BCLK	I	Bit-clock signal input
6	DATA	I	Digital audio tape signal input
7	LRCK	I	L-R Clock signal input
8	TEST	I	Connected to GND
9	ATT	I	Connected to GND
10	SHIFT	I	Connected to GND
11	LATCH	I	Connected to GND
12	INITB	I	Initial signal input
13	TEST	I	Connected to GND
14, 15	EMPH2 EMPH1	I	Deemphasis institute signal input
16	DIN	—	Connected to GND
17	SOC2	—	Connected to GND
18	SOC1	—	Connected to GND
19	MODE	I	Mode select signal input
20	TEST	—	Connected to GND
21	TEST	—	Connected to GND
22	DGND	—	Connected to GND
23	CLK OUT	—	Not used
24, 25	XIN XOUT	I O	Clock signal input/output terminal
26, 27	AGND VREFL	—	Connected to GND
28	CH2OUT	O	DAC signal output (R-ch out)

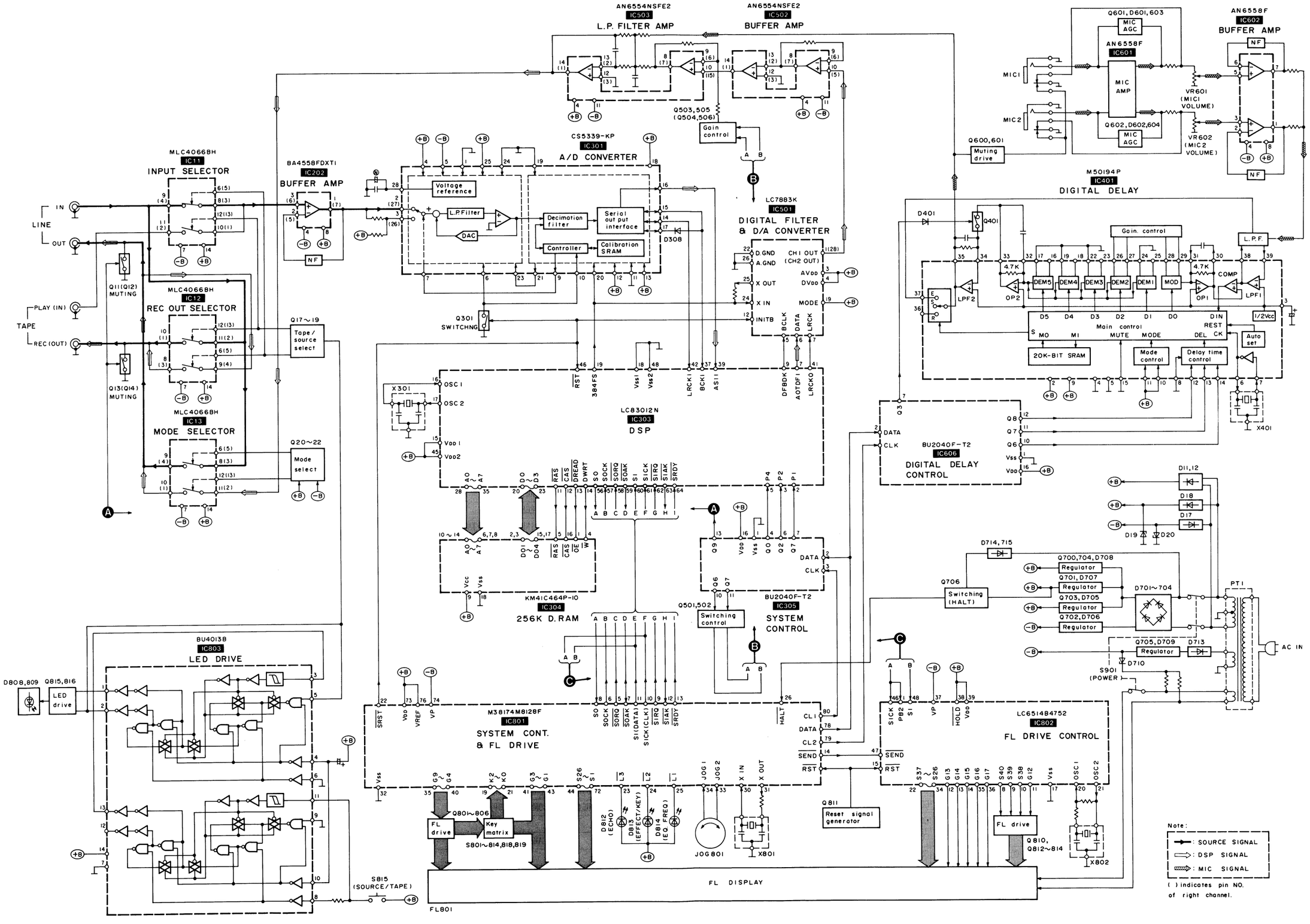
■ IC801 (M38174M8128F)

Pin No.	Terminal Name	I/O	Function
1	—	—	Connected to GND
2	—	—	Connected to GND
3	—	—	Connected to GND
4	—	—	Connected to GND
5~9	$\overline{SORQ}$, $\overline{SOCK}$ $\overline{SOAK}$, SO, $\overline{SIRQ}$	I/O	Display control signal input-output terminal
10~13	SICK (CLK), SI (DATA), $\overline{SIAK}$, $\overline{SRDY}$	I/O	Display control signal, data signal and clock signal input-output terminal
14	$\overline{SEND}$	O	Display control signal output
15	BDI	—	Not used
16	BCI	—	Not used
17	BDO	—	Not used
18	BCO	—	Not used
19~21	K2~K0	I	Key scan signal input terminal
22	$\overline{SRST}$	O	System reset signal output
23~25	L3, L2, L1	O	JOG mode display control signal output
26	$\overline{HALT}$	I	Backup detctro signal input
27	$\overline{RST}$	I	Reset signal input terminal
28	—	—	Connected to GND
29	—	—	Not used
30, 31	X I X O	I O	Crystal oscillator (X801 6 MHz) connect terminal
32	V_{SS}	I	GND terminal
33, 34	JOG2 JOG1	I	JOG Encoder signal input terminal
35	$\overline{G9}$	O	FL Grid control signal output
36~43	$\overline{G8}$~$\overline{G4}$, G3~G1	O	FL Grid control signal and key scan control signal output
44~56	S26~S14	O	FL Segment control signal output
57~59	G12~G10	O	FL Grid control signal output
60~72	S13~S1	O	FL Segment control signal output
73	Vdd	I	Power supply (+5 V)
74	−VP	I	FL Pull-up voltage input
75	A. GND	I	GND terminal
76	VREF	I	A/D Converter reference voltage input terminal
77	ST	O	Strobe signal output terminal
78	DO	O	Data signal output terminal
79, 80	CL2 CL1	O	Clock signal output terminal

■ IC802 (LC6514B4752)

Pin No.	Terminal Name	I/O	Function
1, 46	PB2, SICK	I	Clock signal input terminal
2, 3	—	—	Connected to GND
4, 5	$\overline{G18}$ G19	—	Not used
6, 7	$\overline{NC}$ $\overline{S14}$	—	Not used
8~10	S40~S38	O	FL Segment control signal output terminal
11	G12	O	FL Grid control signal output terminal
12~14	G13~G15	O	FL Grid control signal output terminal
15	$\overline{RST}$	I	Reset terminal
16	TST	I	Not used
17	Vss	I	GND terminal
18, 19	NC	—	Not used
20, 21	OSC1 OSC2	I O	Crystal oscillator (X802 3 MHz) connect terminal
22~25	S37~S34	O	FL Segment control signal output terminal
26~29	S33~S30	O	FL Grid control signal output terminal
30	NC	—	Not used
31~34	S29~S26	O	FL Segment control signal output terminal
35, 36	G16 G17	O	FL Grid control signal output terminal
37	$\overline{VP}$	I	FL Pull-down voltage input
38	$\overline{HOLD}$	I	Connect V_{DD}
39	V_{DD}	I	Power supply (+5 V)
40, 41	PA0 PA1	—	Connected to GND
42, 43	NC	—	Not used
44, 45	PA2 PA3	—	Connected to GND
47	$\overline{SEND}$	I	Display control signal input
48	SI	I	Serial data input terminal

■ BLOCK DIAGRAM



■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11-13	MLC4066BH	I. C, INPUT/REC OUT/MODE SEL.	
IC202	BA4558FDXT1	I. C, BUFFER AMP.	
IC301	CS5339-KP	I. C, A/D CONVERTER	
IC303	LC83012N	I. C, D. S. P.	
IC304	KM41C464P-10	I. C, 256K D. RAM	
IC305	BU2040F-T2	I. C, SYSTEM CONTROL	
IC401	M50194P	I. C, DIGITAL DELAY	
IC501	LC7883K	I. C, D/A CONVERTER	
IC502, 503	AN6554NSFE2	I. C, L. P. F. /BUFFER AMP.	
IC601, 602	AN6558F	I. C, MIC/BUFFER AMP.	
IC606	BU2040F-T2	I. C, DIGITAL DELAY CONTROL	
IC801	M38174M8128F	I. C, FL DRIVE	
IC802	LC6514B4752	I. C, FL DRIVE CONTROL	
IC803	BU4013B	I. C, LED DRIVE	
		TRANSISTOR(S)	
Q11-14	2SC3327-A	TRANSISTOR	
Q15	DTA114ESTP	TRANSISTOR	
Q17	DTA144ESTP	TRANSISTOR	
Q18	DTC114ESTP	TRANSISTOR	
Q19	DTC144ESTP	TRANSISTOR	
Q20	DTA144ESTP	TRANSISTOR	
Q21	DTC114ESTP	TRANSISTOR	
Q22	DTC144ESTP	TRANSISTOR	
Q301	DTC114ESTP	TRANSISTOR	
Q401	2SJ164PQRTA	TRANSISTOR	
Q501, 502	DTA114ESTP	TRANSISTOR	
Q503-506	2SD2144S	TRANSISTOR	
Q511	DTC114ESTP	TRANSISTOR	
Q600	DTA114ESTP	TRANSISTOR	
Q601, 602	2SC3311A-Q	TRANSISTOR	
Q611	2SD2144S	TRANSISTOR	
Q700	2SD1762EF	TRANSISTOR	
Q701	2SD2037DEFTA	TRANSISTOR	
Q702	2SB1357DEFTA	TRANSISTOR	
Q703	2SD592ANCQ	TRANSISTOR	
Q704	2SD1762EF	TRANSISTOR	
Q705	2SB621A-R	TRANSISTOR	
Q706	2SC3311A-Q	TRANSISTOR	
Q801-806	DTA114ESTP	TRANSISTOR	
Q810	DTC144ESTP	TRANSISTOR	
Q811	DTC114YSTP	TRANSISTOR	
Q812-814	DTA114ESTP	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q815, 816	DTC114ESTP	TRANSISTOR	
		DIODE(S)	
D11, 12	MA165	DIODE	⚠
D17, 18	MA165	DIODE	⚠
D19, 20	MA4120	DIODE	
D201, 202	MA4062MTA	DIODE	
D301	MA4051MTA	DIODE	
D308	MA700	DIODE	
D401	MA165	DIODE	
D601-604	MA165	DIODE	
D701-704	1SR35200TB	DIODE	⚠
D705, 706	MA4120	DIODE	
D707	MA4056HTA	DIODE	
D708	MA4062MTA	DIODE	
D709	MA4300M	DIODE	
D710	MA4043M	DIODE	⚠
D711	MA165	DIODE	
D712	1SS291TA	DIODE	
D713	MA167	DIODE	
D714, 715	MA165	DIODE	⚠
D800	1SS291TA	DIODE	
D801	MA165	DIODE	
D803-807	MA165	DIODE	
D808	LN846RP-C	L. E. D.	
D809	LN446YP	L. E. D.	
D810, 811	MA165	DIODE	
D812-814	LN846RP-C	L. E. D.	
D815-818	MA165	DIODE	
		VARIABLE RESISTOR(S)	
VR601, 602	EVJ01BFB2A14	V. R, MIC VOLUME CONTROL	
JOG801	EVQWPA02224B	JOG CONTROL	
		COIL(S)	
L71	RLQZP2R2KT-Y	COIL	
L72	RLQZP4R7KT-Y	COIL	
L300	ELESN101KA	COIL	
L302, 303	RLQZP101KT-Y	COIL	
L401	RLQZP1R0KT-Y	COIL	
L501	RLQZP101KT-Y	COIL	
L601, 602	RLQZP3R3KT-Y	COIL	
L701, 702	SLQX400-D	COIL	⚠
L801, 802	ELEXT101KA9	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
		OSCILLATOR(S)	
X301	RSXZ16M9M01T	OSCILLATOR	
X401	EFOGC4004A4	OSCILLATOR	
X801	EFOGC6004T4	OSCILLATOR	
X802	EFOGC3004T4	OSCILLATOR	
		DISPLAY(S)	
FL801	RSL0113-F	FL DISPLAY	⚠
		SWITCH(ES)	
S701	SSR187-1	SW, VOLTAGE SELECTOR	⚠(GC)
S801	EVQ21405R	SW, EQ ON/FLAT	
S802	EVQ21405R	SW, BAND DOWN	
S803	EVQ21405R	SW, BAND UP	
S804	EVQ21405R	SW, LEVEL DOWN	
S805	EVQ21405R	SW, LEVEL UP	
S806	EVQ21405R	SW, SLOPE(Q)	
S807	EVQ21405R	SW, FIXED MODE	
S808	EVQ21405R	SW, USER MODE	
S809	EVQ21405R	SW, MEMO	
S810	EVQ21405R	SW, SFP OFF/ON	
S811	EVQ21405R	SW, DEMO	
S812	EVQ21405R	SW, VOICE MUTE	
S813	EVQ21405R	SW, KEY CON	
S814	EVQ21405R	SW, ECHO	
S815	EVQ21405R	SW, INPUT SOURCE/TAPE	
S818	EVQ21405R	SW, DISPLAY SPECTRUM MODE	
S819	EVQ21405R	SW, JOG MODE	
S901	RSP2D009-J	SW, POWER	⚠
		CONNECTOR(S)	
CN602	RJS1A1705	SOCKET(5P)	
CN801-803	SJS50581BB	SOCKET(5P)	
CN805-807	RJU003K008M1	SOCKET(8P)	
CN808	SJS50581BB	SOCKET(5P)	
CN701A	RJS1A1703	SOCKET(3P)	
CN901A	RJS1A1703	SOCKET(3P)	
CN701B	RJS1A1703	SOCKET(3P)	
CN901B	RJS1A1703	SOCKET(3P)	
CP801-803	SJT30549BB1	CONNECTOR(5P)	
CP805-807	RJT003K008-1	CONNECTOR(8P)	
CP808	SJT30549BB1	CONNECTOR(5P)	
		EARTH TERMINAL(S)	
E1, 2	SNE1004-1	GND PLATE	

Ref. No.	Part No.	Part Name & Description	Remarks
		TRANSFORMER(S)	
PT1	RTP1K4B014	POWER TRANSFORMER	⚠(E, EB, EG, GN)
PT1	RTP1K4E023	POWER TRANSFORMER	⚠(GC)
		JACKS(S)	
JK11	SJF3069-5N	IN/OUT JACK	
JK12	SJF3069-5N	IN/OUT JACK	
JK601	RJJ65MA01	MIC 1 JACK	
JK602	RJJ65MA01	MIC 2 JACK	
JK701	SJS9236	AC INLET	⚠(E, EB, EG, GC)
JK701	SJSD16	AC INLET	⚠(GN)

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R1-5	ERDS2TJ102	1/4W 1K
R11-18	ERDS2TJ224T	1/4W 220K
R19-30	ERDS2TJ102	1/4W 1K
R31, 32	ERDS2TJ224T	1/4W 220K
R33	ERDS2TJ222	1/4W 2.2K
R36	ERDS2TJ333	1/4W 33K
R40	ERDS2TJ221	1/4W 220
R42	ERDS2TJ221	1/4W 220
R43, 44	ERDS2TJ103	1/4W 10K
R45	ERDS2TJ104	1/4W 100K
R203, 204	ERDS2TJ224T	1/4W 220K
R205, 206	ERDS2TJ433	1/4W 43K
R209, 210	ERDS2TJ153	1/4W 15K
R215, 216	ERDS2TJ223	1/4W 22K
R217, 218	ERDS2TJ101	1/4W 100
R219, 220	ERDS2TJ682T	1/4W 6.8K
R223, 224	ERDS2TJ102	1/4W 1K
R301, 302	ERDS2TJ222	1/4W 2.2K
R303	ERDS1FVJ271T	1/2W 270 ⚠
R304	ERDS2TJ102	1/4W 1K
R305	ERDS2TJ103	1/4W 10K
R306	ERDS2TJ560T	1/4W 56
R307	ERDS2TJ222	1/4W 2.2K
R309	ERDS2TJ103	1/4W 10K
R311-319	ERDS2TJ101	1/4W 100
R322-325	ERDS2TJ101	1/4W 100
R327	ERDS2TJ102	1/4W 1K
R328	ERDS2TJ221	1/4W 220
R330-332	ERDS2TJ102	1/4W 1K
R334-337	ERDS2TJ101	1/4W 100
R340, 341	ERDS2TJ102	1/4W 1K
R342	ERDS2TJ103	1/4W 10K
R343-352	ERDS2TJ102	1/4W 1K
R354, 355	ERDS2TJ103	1/4W 10K
R356	ERDS2TJ472	1/4W 4.7K
R359-361	ERDS2TJ103	1/4W 10K
R363, 364	ERDS2TJ102	1/4W 1K
R365	ERDS2TJ100	1/4W 10
R366	ERDS2TJ4R7T	1/4W 4.7
R370, 371	ERDS2TJ222	1/4W 2.2K
R372	ERDS2EJ121	1/4W 120
R373	ERDS2TJ100	1/4W 10
R376	ERDS2TJ103	1/4W 10K
R380	ERDS1FVJ271T	1/2W 270 ⚠
R400	ERDS2TJ104	1/4W 100K
R401	ERDS2TJ220T	1/4W 22

Ref. No.	Part No.	Values & Remarks
R402	ERDS2TJ102	1/4W 1K
R403	ERDS2TJ822	1/4W 8.2K
R404	ERDS2TJ123	1/4W 12K
R405	ERDS2TJ822	1/4W 8.2K
R406	ERDS2TJ183T	1/4W 18K
R407, 408	ERDS2TJ822	1/4W 8.2K
R409	ERDS2TJ123	1/4W 12K
R410	ERDS2TJ752T	1/4W 7.5K
R411	ERDS2TJ753T	1/4W 75K
R412	ERDS2TJ752T	1/4W 7.5K
R413	ERDS2TJ753T	1/4W 75K
R415	ERDS2TJ122	1/4W 1.2K
R416	ERDS2TJ105T	1/4W 1M
R417-419	ERDS2TJ103	1/4W 10K
R420	ERDS2TJ271	1/4W 270
R421	ERDS2TJ273	1/4W 27K
R500	ERDS2TJ105T	1/4W 1M
R502	ERDS2TJ102	1/4W 1K
R503, 504	ERDS2TJ152	1/4W 1.5K
R505	ERDS2TJ181T	1/4W 180
R507, 508	ERDS2TJ123	1/4W 12K
R511, 512	ERDS2TJ223	1/4W 22K
R513, 514	ERDS2TJ512T	1/4W 5.1K
R515, 516	ERDS2TJ242	1/4W 2.4K
R517, 518	ERDS2TJ103	1/4W 10K
R519, 520	ERDS2TJ561	1/4W 560
R521, 522	ERDS2TJ563	1/4W 56K
R525, 526	ERDS2TJ223	1/4W 22K
R527, 528	ERDS2TJ332	1/4W 3.3K
R529, 530	ERDS2TJ103	1/4W 10K
R531-534	ERDS2TJ102	1/4W 1K
R539, 540	ERDS2TJ432T	1/4W 4.3K
R541, 542	ERDS2TJ272T	1/4W 2.7K
R546, 547	ERDS2TJ104	1/4W 100K
R551, 552	ERDS2TJ222	1/4W 2.2K
R553	ERDS2TJ100	1/4W 10
R600	ERDS2TJ332	1/4W 3.3K
R601, 602	ERDS2TJ102	1/4W 1K
R603, 604	ERDS2TJ332	1/4W 3.3K
R605, 606	ERDS2TJ472	1/4W 4.7K
R607, 608	ERDS2TJ332	1/4W 3.3K
R609, 610	ERDS2TJ561	1/4W 560
R611, 612	ERDS2TJ184T	1/4W 180K
R613, 614	ERDS2TJ102	1/4W 1K
R615, 616	ERDS2TJ104	1/4W 100K
R617, 618	ERDS2TJ332	1/4W 3.3K
R619, 620	ERDS2TJ103	1/4W 10K
R621, 622	ERDS2TJ102	1/4W 1K
R623, 624	ERDS2TJ104	1/4W 100K

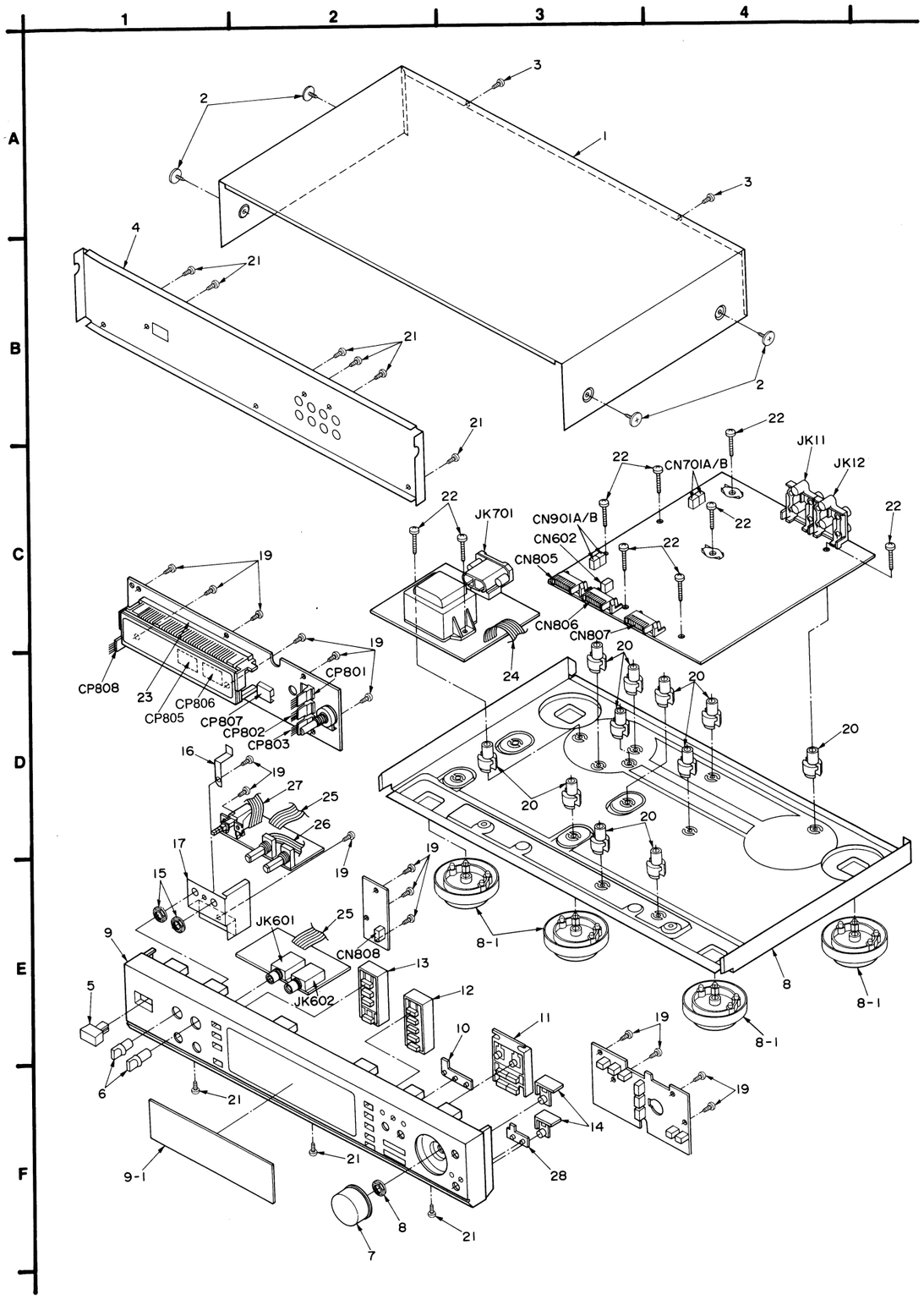
Ref. No.	Part No.	Values & Remarks
R625A	ERDS2TJ101	1/4W 100
R625	ERDS2TJ102	1/4W 1K
R626	ERDS2TJ102	1/4W 1K
R631, 632	ERDS2TJ102	1/4W 1K
R635	ERDS2TJ222	1/4W 2.2K
R700	ERG1SJ120E	1W 12
R701, 702	ERD2FCVJ4R7T	1/4W 4.7 ⚠
R703	ERDS2TJ391	1/4W 390
R704	ERDS2TJ821	1/4W 820
R705	ERD25FJ330	1/4W 33 ⚠
R706	ERDS2TJ102	1/4W 1K
R707	ERDS2TJ331	1/4W 330
R708	ERG1SJ120E	1W 12
R709	ERDS2TJ471	1/4W 470
R710	ERDS2TJ561	1/4W 560
R711	ERDS2TJ332	1/4W 3.3K
R712	ERG1SJ120E	1W 12
R714, 715	ERDS2TJ101	1/4W 100
R716	ERDS2TJ223	1/4W 22K
R717	ERDS2TJ222	1/4W 2.2K
R718	ERDS2TJ102	1/4W 1K
R720-722	ERG1SJ120E	1W 12
R723	ERD25FJ330	1/4W 33 ⚠
R733, 734	ERDS2TJR47T	1/4W 0.47
R740	ERDS1FVJ2R2T	1/2W 2.2 ⚠
R741, 742	ERQ16NKWR68E	1W 0.68 ⚠
R800	ERDS2TJ223	1/4W 22K
R801	ERDS2TJ122	1/4W 1.2K
R803	ERDS2TJ103	1/4W 10K
R805-813	ERDS2TJ104	1/4W 100K
R814	ERDS2TJ122	1/4W 1.2K
R815	ERDS2TJ105T	1/4W 1M
R816-818	ERDS2TJ103	1/4W 10K
R819, 820	ERDS2TJ153	1/4W 15K
R821, 822	ERDS2TJ104	1/4W 100K
R823	ERDS2TJ824	1/4W 820K
R824	ERDS2TJ271	1/4W 270
R825	ERDS2TJ103	1/4W 10K
R826	ERDS2TJ221	1/4W 220
R827	ERDS2TJ104	1/4W 100K
R828	ERDS2EJ121	1/4W 120
R830	ERDS2TJ103	1/4W 10K
		CAPACITORS
C11-18	ECBT1H101KB5	50V 100P
C19	ECA1VM101B	35V 100U
C20	ECEA1EKA4R7B	25V 4.7U
C22, 23	ECEA1VU470	35V 47U

Ref. No.	Part No.	Values & Remarks
C24-26	ECBT1E103ZF	25V 0.01U
C201, 202	ECEA1CKA100B	16V 10U
C203, 204	ECBT1H300J5	50V 30P
C205, 206	ECBT1H101KB5	50V 100P
C209	ECBT1E103ZF	25V 0.01U
C211	ECBT1E103ZF	25V 0.01U
C213, 214	ECBT1H102KB5	50V 1000P
C215, 216	ECEA1CKA100B	16V 10U
C300	ECBT1H102KB5	50V 1000P
C301-303	ECEA1CKA100B	16V 10U
C304	ECBT1E223ZF	25V 0.022U
C305	ECEA1AKN100B	10V 10U ⚠
C306-308	ECBT1E223ZF	25V 0.022U
C309	ECEA0JKA101B	6.3V 100U
C310	ECBT1E103ZF	25V 0.01U
C313	ECBT1E223ZF	25V 0.022U
C314	ECEA1CKA100B	16V 10U
C315, 316	ECBT1H101KB5	50V 100P
C317	ECBT1H104ZF5	50V 0.1U
C318	ECEA0JKA221B	6.3V 220U
C319	ECBT1H104ZF5	50V 0.1U
C321	ECBT1H104ZF5	50V 0.1U
C322	ECQV1H104JM3	50V 0.1U
C324	ECBT1H104ZF5	50V 0.1U
C350, 351	ECBT1H150J5	50V 15P
C371	ECEA0JKA101B	6.3V 100U
C400	ECEA1HKA3R3B	50V 3.3U
C401	ECBT1E223ZF	25V 0.022U
C402	ECEA0JKA101B	6.3V 100U
C403	ECBT1H104ZF5	50V 0.1U
C404	ECEA1HKA010B	50V 1U
C405	ECBT1C122KR5	16V 1200P
C406	ECEA1HKA010B	50V 1U
C407	ECBT1C103KS5	16V 0.01U
C409	ECBT1C122KR5	16V 1200P
C410	ECBT1H332KR5	50V 3300P
C411, 412	ECFR1E473KR	25V 0.047U
C413	ECEA1HKAR33B	50V 0.33U
C414	ECBT1E103ZF	25V 0.01U
C415	ECEA1HKAR33B	50V 0.33U
C416	ECBT1E103ZF	25V 0.01U
C417	ECEA0JKA470B	6.3V 47U
C418	ECEA0JKA101B	6.3V 100U
C419	ECBT1E223ZF	25V 0.022U
C420	ECEA1HKA010B	50V 1U
C421	ECBT1E103ZF	25V 0.01U
C501	ECBT1H102KB5	50V 1000P
C502	ECQV1H104JM3	50V 0.1U
C503	ECEA0JKA221B	6.3V 220U
C504	ECEA1CKA101B	16V 100U
C505	ECBT1E103ZF	25V 0.01U
C506	ECBT1H102KB5	50V 1000P

Ref. No.	Part No.	Values & Remarks
C507, 508	ECBT1H331KB5	50V 330P
C510	ECEA1HKA010B	50V 1U
C511, 512	ECEA1CKA100B	16V 10U
C513, 514	ECBT1H680J5	50V 68P
C517, 518	ECEA1HKAR22B	50V 0.22U
C519, 520	ECEA1CKA100B	16V 10U
C521, 522	ECBT1H102KB5	50V 1000P
C526	ECBT1E103ZF	25V 0.01U
C527	ECBT1H104ZF5	50V 0.1U
C531	ECBT1E103ZF	25V 0.01U
C541, 542	ECEA1CKA100B	16V 10U
C543	ECBT1H104ZF5	50V 0.1U
C598	ECBT1H221KB5	50V 220P
C599	ECBT1H102KB5	50V 1000P
C600	ECEA1CKA100B	16V 10U
C601, 602	ECEA1HKA010B	50V 1U
C603, 604	ECEA1HKA2R2B	50V 2.2U
C605, 606	ECBT1H101KB5	50V 100P
C607, 608	ECBT1H220J5	50V 22P
C609, 610	ECEA1CKA100B	16V 10U
C611, 612	ECEA1HKA3R3B	50V 3.3U
C613, 614	ECBT1H331KB5	50V 330P
C615, 616	ECBT1H102KB5	50V 1000P
C617, 618	ECBT1H181KB5	50V 180P
C619, 620	ECBT1E103ZF	25V 0.01U
C621	ECEA1CKA100B	16V 10U
C622	ECBT1H102KB5	50V 1000P
C623-626	ECBT1H221KB5	50V 220P
C627	ECBT1E223ZF	25V 0.022U
C631, 632	ECBT1H101KB5	50V 100P
C635	ECBT1H104ZF5	50V 0.1U
C701, 702	ECQV1H104JM3	50V 0.1U ⚠
C703	ECA1CM222E	16V 2200U
C704	ECA1EM471B	25V 470U
C705-709	ECKR1H103ZF5	50V 0.01U
C711	ECEA1AKA101B	10V 100U
C713	ECEA1CKA470B	16V 47U
C714	ECEA1CKA100B	16V 10U
C715	ECA1VM101B	35V 100U
C716	ECEA1CKA100B	16V 10U
C717	ECEA1HKA2R2B	50V 2.2U
C719	ECA0JM102B	6.3V 1000U
C720-723	ECBT1E103ZF	25V 0.01U ⚠
C724, 725	ECQV1H104JM3	50V 0.1U
C801, 802	ECEA1HKA010B	50V 1U ⚠
C803, 804	ECEA0JKA101B	6.3V 100U
C805-807	ECBT1E103ZF	25V 0.01U
C808	ECEA1HKA010B	50V 1U
C809	ECBT1E103ZF	25V 0.01U
C811	ECBT1E103ZF	25V 0.01U
C812	ECEA1HKA2R2B	50V 2.2U
C813	ECEA0JKA101B	6.3V 100U

Ref. No.	Part No.	Values & Remarks
C814-816	ECBT1E103ZF	25V 0.01U

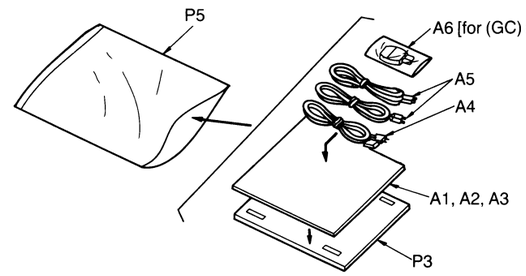
■ CABINET PARTS LOCATION

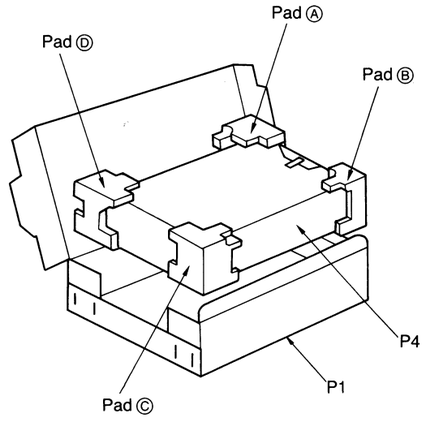


Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RKM0078-1K	CABINET	
2	SNE2129-1	SCREW	
3	XTBS3+8JFZ1	SCREW	
4	RGR0151A-B1	REAR PANEL	(E)
4	RGR0151A-C1	REAR PANEL	(EB)
4	RGR0151A-A1	REAR PANEL	(EG)
4	RGR0151B-A1	REAR PANEL	(GC)
4	RGR0151A-C1	REAR PANEL	(GN)
5	RGU0030	POWER BUTTON	
6	RGW0048	MIC VOLUME KNOB	
7	RGW0155-K	JOG CONTROL KNOB	
8	RFKJHGE90E-K	BOTTOM BORAD ASS'Y	
8-1	RKA0053-A	FOOT	
9	RFKGHGE90E-K	FRONT PANEL ASS'Y	
9-1	RKW0231-K	FL PANEL	
10	RFKNHGE90EAK	ORNAMENT(A) ASS'Y	
11	RGU0780-K	SELECT BUTTON(A)	
12	RGU0781-K	SELECT BUTTON(B)	
13	RGU0781A-K	SELECT BUTTON(C)	
14	RGU0782-K	MONITOR BUTTON	
15	RHN90001	NUT	
16	RMC0183	EARTH SPRING	
17	RMN0188	ANGLE	
18	SNE4021-1	NUT	
19	XTBS26+8J	SCREW	
20	SHE187-2	P.C.B.SPACER	
21	XTBS3+8JFZ1	SCREW	
22	XTB3+20JFZ	SCREW	
23	RMN0156	FL HOLDER	
24	RWJ1806110KQ	FLAT CABLE(6P)	
25	RWJ1806110KK	FLAT CABLE(6P) (JW601)	
26	RWJ1805230KQ	FLAT CABLE(5P) (JW602)	
27	RWJ1806230KQ	FLAT CABLE(6P) (JW901)	
28	RFKNHGE90EBK	ORNAMENT(B) ASS'Y	
		PACKING MATERIALS	
P1	RPG1344	PACKING CASE	
P2	RPN0628	PAD	
P3	RPQ0164	ACCESSORY PAD	
P4	XZB50X65A02Z	PROTECTION COVER	
P5	XZB24X34C04	PROTECTION COVER	
		ACCESSORIES	
A1	RFKSHGE90E-K	INSTRUCTIONS MANUAL	(E)
A1	RQT1633-B	INSTRUCTIONS MANUAL	(EB)
A1	RFKSHGE90EGK	INSTRUCTIONS MANUAL	(EG)
A1	RFKSHGE90GCK	INSTRUCTIONS MANUAL	(GC)

Ref. No.	Part No.	Part Name & Description	Remarks
A1	RQT1633-B	INSTRUCTIONS MANUAL	(GN)
A2	RQA0013	WARRANTY CARD	(E, EB, EG)
A2	RQX7433ZA	WARRANTY CARD	(GN)
A3	RQCB0169	SERVICE CENTER LIST	
A4	RJA0019-1K	AC POWER SUPPLY CORD	⚠(E, EG)
A4	SJA193	AC POWER SUPPLY CORD	⚠(EB)
A4	RJA0004	AC POWER SUPPLY CORD	⚠(GC)
A4	SJA173	AC POWER SUPPLY CORD	⚠(GN)
A5	SJP2276	STEREO CONNECTION CABLE	
A6	SJP9215	POWER PLUG ADAPTOR	⚠(GC)

■ PACKAGING





P2
Pad ⒶⒷⒸⒹ ass'y: RPN0628

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